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AMERICAN ARTISAN and Hardware Record

Vol. 88. No. 8. 620 SOUTH MICHIGAN AVENUE, CHICAGO, AUGUST 23, 1924. \$2.00 Per Year.



The fact that the Weir has been an outstanding, high quality product in the Warm Air Heating industry for over thirty-five years, sold solely on its merit by dealers like yourself, is enough to tell you that its agency will prove a profitable, as well as a reputation-building asset for your business.



Write today for a copy of
"The Weir Book of Facts"

The MEYER FURNACE Co.
Peoria, Illinois

Success Heaters



***Make success certain on your Public Building
and other big heating contracts with***

The +Power+Plus+

FOR that School, Church, Hall or big home where great quantities of moist, comfortable, warm and purified air are essential, be sure of a successful heating system.

The Success Power Plus is designed and constructed especially for this type of warm air heating service. The oblong shape and twin radiators give the Power Plus more square feet of radiation per square foot of grate area than any other heater on the market.

Strong, self-cleaning locomotive type grates—one-quarter inch steel plates—riveted and calked, gas, soot and smoke tight—best quality fire-brick—large humidifier and faultless construction throughout are some of the few outstanding reasons why the Power Plus stands first in capacity, durability and efficiency.

Because of the great amount of heating surface the Power Plus is ideal for the fan system of warm air heating.

Our expert engineering service is at your command on all Power Plus installations.

Now—go after the big contracts with the Power Plus.



The Success Sales Plan and the Success catalogs of "Health Heat" Warm Air Heating systems will be mailed on request. Write today.



Success Heater Manufacturing Company
Des Moines, Iowa

Founded 1880 by Daniel Stern

Published to Serve
the
Warm Air Furnace
Sheet Metal, Stove
and
Hardware Interests

AMERICAN ARTISAN and Hardware Record

Address all communications
and remittances to
**AMERICAN ARTISAN
AND
HARDWARE RECORD**
620 South Michigan Avenue
CHICAGO, ILLINOIS

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CHICAGO, AUGUST 23, 1924.

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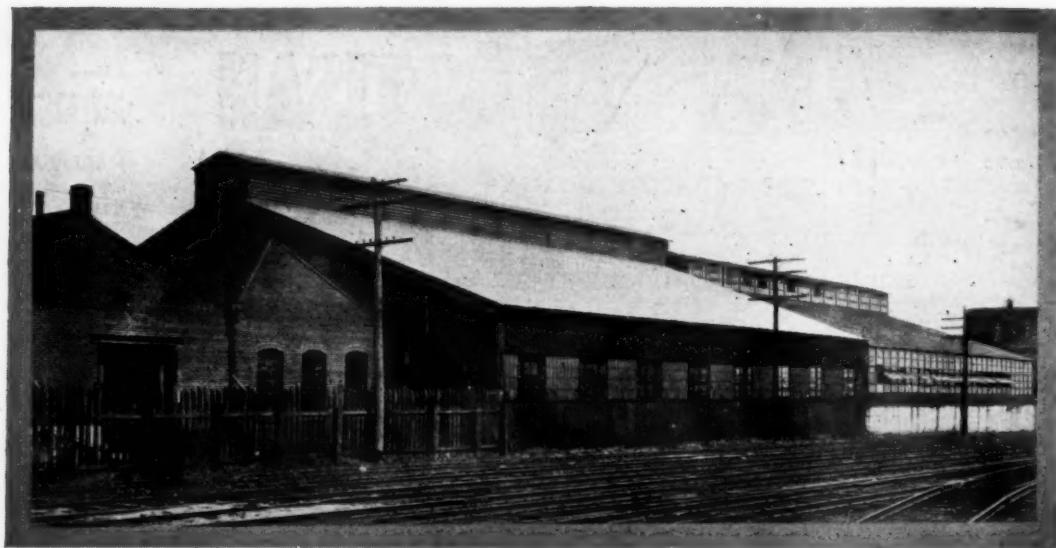
THE CIRCULATION OF IDEAS

MAKING MEN proud of their work never cuts production or diminishes quality. But constant drain of their sense of fulfillment does that very thing.

YOU HAVE ONE excellent way to make your superintendent or your foreman or one or a group of your workmen proud of their work. The way is this:

SUPPOSE in your organization there has been solved one of the constant problems that always accompany construction. The problem may be nothing more than some new way of placing a machine so that production is increased. Or the problem may have been the expeditious repair of equipment. One hundred and one thousand possibilities present themselves.

NOW IF YOU will write the occurrence in a letter to the editor of AMERICAN ARTISAN AND HARDWARE RECORD and send a picture if possible, the event can be given publicity. It will be interesting to other contractors and their forces, and it will create a spirit in your own organization that will help wonderfully in getting results.



Plant of Dayton Pipe Coupling Co., Dayton, Ohio. Roof is 24 gauge galvanized and corrugated ARMCO-Ingot Iron.

An interesting roof of ARMCO-Ingot Iron

Beneath this ARMCO-Ingot Iron roof, furnaces are constantly throwing off sulphurous fumes. Then there is the condensation of steam against the roof, and the attack of coal smoke from the many locomotives that pass daily.

Certainly such service conditions require a metal that can withstand the attack of corrosion.

That metal is ARMCO-Ingot Iron.

When a heating engineer or sheet metal contractor uses Ingot Iron, he uses a sheet metal that has acquired a splendid reputation. And, it helps him build for the future.

*Ask for interesting Booklet:
"Building a Business with Iron that Lasts"*



ARMCO TRADE MARK INGOT IRON

The American Rolling Mill Co., Middletown, Ohio

(Export)

THE ARMCO INTERNATIONAL CORPORATION
Cable Address—ARMCO, Middletown, Ohio

Did You Show an Increase in 1924 Sales Over 1923 of 17½ Per Cent?

Editorial
of the
Week

THE sales record of the second largest retail mail order house for the first six months of 1924 shows a total of \$75,725,618.00, an increase of \$11,238,698.00, or 17.52 per cent above the figures for the same period of 1923.

This statement takes on added importance in view of the fact that the month of June is the twenty-ninth consecutive month in which this house has shown increased sales.

And there is also this point to consider:

That retail mail order houses do by far the greatest portion of their business in rural sections and sell their goods practically on a cash basis.

In other words:

Here we have a retail concern the sales of which are principally with the class of our people who some would have us believe have no money to spend for anything but the bare necessities of life.

Here we have a concern whose sales are done on a cash basis.

Here we have a concern whose sales for the first six months of 1924 are 17½ per cent higher than for the same period of 1923, at which time they were also higher than for the same period of 1922.

And yet—

There are those who say that it does not pay to advertise.

And yet—

There are those who say that it does not pay to urge farmers to buy in this year of 1924.

And yet—

There are those who say that they cannot afford to go after business in an aggressive manner.

That mail order house did not make a gain of 17½ per cent by waiting for people to mail

in their orders from catalogs sent out last year.

That mail order house did not show over a one-sixth increase by leaving the rural trade alone.

That mail order house went after business, because those who run it know that—

In every community there are always a number of people who have money to spend and who are willing to spend it for things that they can use in their daily tasks or for pleasure.

These same operating heads also know—

That the only way to induce these people to spend their money is to offer their merchandise in an attractive and persuasive manner and at a reasonable price.

And they went ahead and did so, with the result that their sales ran over 17½ per cent ahead of 1923!

We know of some merchants whose sales show the same sort of increase, or better.

We also know of some whose sales are no better than those of 1923, and we know of cases where the record is even worse.

And we state without fear of successful contradiction that in the great majority of cases where the sales record and the cash receipts for the first six months of 1924 were not greater than for the same period of 1923, the reason was that the retailer in question failed to go after business which was there for the asking, and not that there was less probability of making sales.

If the retail mail order houses can show an increase of 17½ per cent, there is no reason for the retailer showing less—other than the plain, simple fact that he is not doing what he can to serve the people in his community in the proper manner.

In other words—he is not filling the job that he has chosen.

Random Notes and Sketches.

By Sidney Arnold

A young man with whom I am slightly acquainted as we live in the same suburb came into my office and tried to sell me some public utility bonds. His sales talk was good; his proposition appeared all right; I had the money and was looking for just that sort of investment—and yet I turned him down (for the time being).

The reason?

This is what I told him:

"Mr. Nicholson, you are connected with a good concern; the bonds you offer for sale appear good and safe with a nice income feature; you have told a good story; your presentation was fine; I am interested in your proposition—but I am not going to buy from you."

"Why?"

"For one reason, and one only: I have noticed you for a considerable time—almost every morning we take the same train. You make a practice of cutting across private and public lawns on your way to the train, apparently giving no heed to the fact that you are trespassing on somebody's property. You always try to board the car before anybody else, so as to get a double seat by yourself, placing your hat or brief case on the seat instead of in the rack above.

"I am inclined to believe that you are a rather selfish person, and I am not going to buy from you, because I do not feel like encouraging young men in being selfish and inconsiderate of the rights of others."

The young man had the grace to blush and told me that he had never consciously transgressed on the rights of anybody—that it was just a matter of sort of unconscious habit that he cut corners.

However, all his talk was of no avail—he failed to make the sale.

I am wondering if what I did really did any good—I cannot say, for the young man has not come to my notice since.

But the fact remains that most of us are prone to "gang our ain gait," without regard to the rights and feelings of others; our convenience seems to be the only guide for our conduct. We break rules of common decency; we break laws where we figure there is no danger of being caught—all to suit our own sweet pleasure.

And usually, in the long run, we get to a point where we are made to pay very dearly for a seemingly slight infraction of what appears to us a minor rule.

* * *

The Ederle family, especially the younger generation, appears to be able to assimilate three square meals a day. Frank and Mrs. Frank and Frank's father are shown here in front of the Kent Hotel in Mont-



C. F., Mrs. F. E. and F. E. Ederle
Waiting for the Crowd at Mont-
morency Falls, Canada.

morency Falls, Canada, presumably waiting for the rest of the folks who enjoyed the tour of the Michigan sheet metal and roofing contractors into Lower Canada.

* * *

Bob Whitmer, who has charge of the residence furnace department of

the American Foundry & Furnace Company, went into a drug store with a man who is also well known in Bloomington, Illinois.

The following conversation took place between the clerk and Bob's friend:

Mr. Jones—I haven't any change with me this morning. Will you trust me for a postage stamp until tomorrow?

Drug Clerk—Certainly, Mr. Jones.

Mr. Jones—But suppose I should get killed or—

Drug Clerk—Pray don't speak of it, Mr. Jones. The loss would be but a trifle.

After they left the store, there was a broad smile on Bob's face, but he did not explain to his friend.

* * *

E. B. Langenberg, who has been vacationing up in Michigan, sends me the following "true" story:

A tourist in Arizona heard a shot and in a short time came upon a rough looking man cutting a notch on the handle of his gun.

"Have you killed a man?" he gasped.

"No," was the reply.

"Then, why the notch?"

"I only cuts 'em when I misses."

* * *

Old Care.

Things will go wrong we know not why,
Our universe is tilted;
We seem to be tied to the tail of care,
A shaggy old nag all wilted,

Who drags us to where they dump queer things—
Like pains and aches and sorrow,
And he walks so slow we are almost mad
When we think of the dreary tomorrow;

But the place is shallow and not very wide,
And care, being weak and old,
Falls when he comes to the edge of the dump
Where the air blows fresh and cold;

And he shrivels as the morning sun
Strikes his boney old back,
And we reach out for the bonny rays
And fall on the grass with a whack;

Then we up and run in case care should pursue,
But he has no place amidst flowers;
So we leave him behind where horrid things are,
Flat on his back with dark hours.

—CARLOTTA BONHEUR STEARNS.

Hussie Pats His Child on the Back for the Good Work It Has Been Doing.

As One of the Men Mainly Responsible for National Warm Air Heating and Ventilating Association, He Commends It for Fine Record.

JOHN H. HUSSIE, familiarly known as "Harry," was one of the men who by their good, common sense and willingness to give and take made the organization of the National Warm Air Heating and Ventilating Association possible, and he has had considerable to do with making it a really successful body, truly representative of the great furnace industry.

We believe, therefore, that the following letter which he wrote to Secretary Williams for the August Bulletin of that Association will be read with much interest:

My friend, Allen Williams, requested me to write something for the Association Bulletin. I asked him what I could write about that would be of interest and he suggested "something biographical, but not autobiographical."

When, about eleven years ago, a number of manufacturers of furnaces and accessories assembled at the Statler Hotel in Cleveland, no one present would have dared to predict from that meeting, an organization such as the National Warm Air Heating and Ventilating Association now is would result.

True, at that time, there was some talk about the necessity of properly advertising warm air heating, but our ideas of advertising were in those days quite different from today and, furthermore, we did not, at that time, have the facts in proper form to present to the public, although a cooperative national advertising campaign was carried on for several years and until stopped by the World war.

If someone had there suggested that a work, such as is now going on at the University of Illinois, be undertaken, he would have been considered a visionary.

If someone had suggested that a house, such as the Educational Research residence be erected for ex-

perimental purposes, he might perhaps have been called a nut.

This only goes to prove how progressive the National Association really is. The members think nothing now of the expense necessary for such work, looking only to the educational results obtained.

We are, through this research work, learning what a good warm air heating plant should be and through the educational advertising now planned, it is hoped that we will soon tell the public, in a truthful way, the merit of warm air heating and thus, in a measure, at least, combat the ridiculous and untruthful statements found, almost daily, in the columns of the press of the country.

It is significant to note that the information, now being given out by the various universities, is very different from that furnished a few years since, which, in many cases, not only was not educational, but absolutely libelous.

The National Warm Air Heat-

ing and Ventilating Association may justly assume credit for starting these educational institutions on the right road, and while some of them have not progressed very far, others are earnestly seeking the truth and real progress may be expected. Those who have worked hard for the advancement of this educational work deserve great credit and the entire association will insure a lasting benefit to mankind, if the members continue for a time, their generous support.

It is also gratifying to note the daily increasing number of furnace installers who are endeavoring to cooperate with the National Association by using the Standard Code, and in other ways, making use of the information received from the research work.

The work of the Association has surely justified its formation and routed the pessimists who, in its infancy, freely predict its early ignoble death.

Let me join with the home owners of this country in hoping that the Association will go on and on growing stronger every day and spreading the gospel of healthful heating throughout the land.

Yours very truly,
JOHN H. HUSSIE.

V. S. Day Shows How to Choose Wall Stacks for Gravity Warm Air System Scientifically.

Revelation Based Upon Research Work at University of Illinois Experiment Station.

THE methods of scientific selection of wall stacks for gravity warm air heating systems was recently revealed by Professor V. S. Day in a paper which he presented at the midsummer meeting of the American Society of Heating and Ventilating Engineers held at Kansas City, Missouri.

The feature of this paper was two curves, based upon the experimental work conducted for the National Warm Air Heating and Ventilating Association at the University of Illinois. One was designed to be easily and effectively applied in the

selection of wall stack sizes and the other to show the velocities of flow actually obtaining in the stacks of gravity warm air furnace installations.

After the heating requirements for the room are calculated and the register temperature predetermined, the curves in Figure 1 show the cross sectional area of the stack which will convey the required amount of heated air at the proper register air temperature. Conversely, if the stack size is predetermined, the heating effect available may be read from the curve, or, again, if

the size of the stack is fixed and the heating requirements known, the necessary register air temperature may be read from the curves.

For example, a room having a calculated heating requirement of 10,000 B. t. u. per hour may be heated at 170 degrees F. at the register, by a stack 45 square inches in area. If a register air temperature of 150 degrees F. is used, the stack

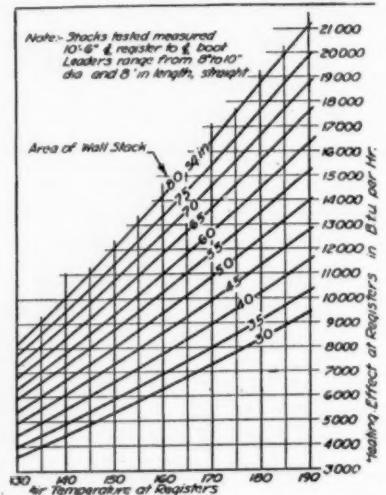


Figure 1.—Relation Between Register Air Temperature, Stack Area and Heating Effect at Register.

must be 65 square inches in area, or, if the stack may not exceed 35 square inches in area, the register temperature must be 188 degrees F. Thus, a given heating effect may be delivered in large pipe at a low register temperature, and in a small pipe at a high register temperature.

From the foregoing will be seen the importance of knowing the considerations affecting the selection of register air temperature, because the register temperature selected as a basis for design must not be so low as to require very large and impracticable pipe sizes, nor so high as to give high discharge velocity with its accompanying high ceiling temperatures.

Professor Day presented a chart (Fig. 2) showing the velocities of flow actually obtaining in the stacks of gravity warm air furnace installations. The chart shows the relation between register air temperature, stack cross-sectional area, and mean velocity of flow in the stacks.

With Figure 2 the actual amount of the changes in velocity occurring

in stacks due to changes in temperature may be determined. In the foregoing example, a register air temperature of 170 degrees F. and a stack 45 square inches in area were mentioned. Figure 2 shows the velocity to be 381 feet per minute. If, as before, the temperature was changed to 150 degrees, the stack area would become 65 square inches and Figure 2 shows the new velocity in the stack to be 295 feet per minute. Thus, it is evident that reducing the register air temperature 20 degrees would bring about a reduction in velocity of 86 feet per minute, or 23 per cent.

As Professor Day showed, both size and velocity are fundamentally dependent upon register air temperature which, he said, must, therefore, be the basis of design in gravity warm air heating design.

Professor Day's paper included a formula for figuring the volume of air required to make good the heat losses from the room:

$$10 H$$

$V = \frac{10 H}{A \times d_r \times (t_r - 70)}$ = velocity in feet per minute, in which H = heating requirements of room, in B. t. u. per hour.

A = area of stack in square inches. d_r = density of the warm air.

$(t_r - 70)$ = difference in temperature between register and normal room temperature.

This expression gives values of flow at the register slightly lower than the mean velocity of flow in

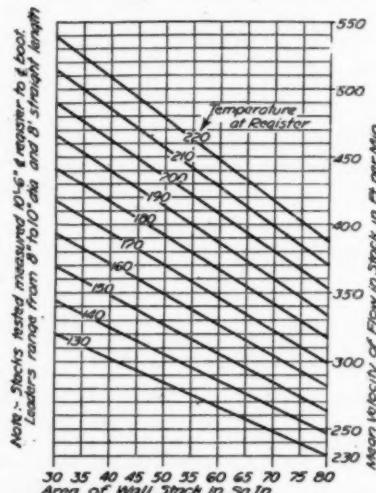


Figure 2.—Relation Between Stack Area, Mean Velocity of Flow in Stack and Register Air Temperature.

the stack, the difference being on the side of safety.

The application is as follows: If, as before, the heat requirement H is 10,000 B. t. u. per hour, and register temperature 170 degrees and the stack area 35 square inches, the velocity is

$$\frac{10 \times 10,000}{35 \times 0.0610 \times 100} = 470 \text{ feet per minute.}$$

Reference to Figure 2 will show that 405 is the velocity corresponding to 170 degrees for this size stack and a change must be made as the velocity required exceeds the velocity obtainable. If the stack area is fixed the temperature must be increased. If 180 degrees is assumed, the velocity calculated will be 430, which is in agreement with the value shown in Figure 2 at 180 degrees. On the other hand, if the register air temperature is fixed at 170 degrees the stack size should be increased. If 45 square inches is assumed the velocity calculated will be 365 and Figure 2 shows that the stack is capable of developing a velocity of 380 feet per minute.

It is important to notice in Figure 2 that higher velocities of flow may be obtained in small stacks at low temperatures than can be obtained in large stacks at much higher temperatures.

Meyer "Gas Draft" Doesn't Like the Price Cutter.

A draft from the *Gas Draft*, the interesting little side kick of the Meyer Furnace Company, Peoria, Illinois, is particularly exhilarating and productive of "pep."

Read the following and if the shoe fits, consider yourself slapped in the face:

"The price cutter is worse than a criminal, according to the *Standard Oil Magazine*. He is a fool. He not only pulls down the standard of his goods; he not only pulls down his competitors, he pulls down himself and his whole trade. He scuttles the ship in which he himself is afloat.

"Any child can throw a glass of water on the floor, but all the wis-

est men in the world can't pick that water up.

"Who gets the benefit of price cutting? NOBODY!"

"The man who sells makes no profit; the man who buys soon finds himself getting an inferior article. No dealer can permanently keep up the standard of his goods if the price is persistently cut. Sooner or later he is compelled to use cheaper

materials and cut down the wages of his workers.

"The man who cuts the price puts up the sign: 'This way to the Junk Heap.' He admits his own failure as a salesman. He admits he has been defeated according to the Marquis of Queensbury rules of business. He admits he cannot win by fighting fairly. He is a hitter below the belt."

Warm Air Furnace Advertisements Must Be Removed from Passive Category.

Definite, Active Descriptions Should Be Employed to Guide Customer in Buying Best System.

THE furnace advertisement appearing daily in the local paper is found to pull the best results when one service at a time is represented there. The tendency often prevalent in so many advertisements, especially those in small towns, is to crowd the space allotted to the advertisement with so many details about which the reader does not care as to act as a decentralizing factor.

This, of course, reduces the pulling power of the advertisement; consequently the owner of the store suffers, first from the loss of business, which he has a right to expect, and, secondly, from the loss of the actual money he spent for the advertising space.

The majority of advertisements appearing in weekly magazines, in which the space rate is very high,

it will be found, confine themselves to one or at most to two objects at a time. In this way greater opportunity for enlargement upon that article or service is offered. Then the following week, or following day, if the advertisement appears in a daily paper, the advertisement is changed.

In the accompanying advertisement the arrangement is not of the best for good results — and, of course, the object of advertising is to obtain results. In addition to the grammatical errors found in the heading of this advertisement, the headline itself is entirely too long. Short headlines are the best, for the simple reason that they do not take too much time to read. There is nothing in this headline which would strike the reader in such a manner as to attract his undivided attention. If the reader is not attracted by the headline, how, we ask, is it to be expected that he will be induced to read the body of the advertisement?

The body of the advertisement, too, has several faults, which, if corrected, would convert the ad from the category of a passive to that of an active and productive advertisement. For instance, in the first paragraph mention is made of pipeless and pipe furnaces. The installer of the furnaces assuredly knows that these furnaces are warm air furnaces, but certainly the people to whom he wishes to sell these installations would never know from the information given them in the advertisement.

Our suggestion would be that the furnace advertisement be remodeled to give the reader some intelligent information on what a warm air furnace is and what it means to the health, comfort and convenience of the man it is hoped to make a customer.

Stop dealing in generalities. This is the age of specialties and specialists whether you accept the fact or not.

An illustration of a warm air furnace would also add to its effectiveness.

The one-time advertiser always loses.

When you think of remodeling or contemplate installing a Plumbing or Heating Job, *think of us.*

We install all kinds of Heating Plants, Steam, Vapor, Hot Water, Pipeless Furnaces and Pipe Furnaces.

We can furnish every thing from a faucet washer to a complete Bathroom.

When in need of guttering, spouting and sheet metal work, we are at your service.

Our prices the lowest, consistent with first class work and material.

Call 220 over telephone and representative will call and go over the matter with you.

Seither & Cherry Co.

25 So. 5th St.
413-419 Johnson St.

Established in Keokuk Over 40 Years

Graphic Illustration of Progress Made to Date on Warm Air Research Residence.

Sizes and Location of Warm and Cold Air Ducts and Furnace in Test House at University of Illinois.

PROGRESS in the construction of the educational research residence, located at the University of Illinois, Urbana, has been catalogued at various times in AMERICAN ARTISAN.

The accompanying illustrations, one an exterior view of the house as it now appears and the other the basement plan showing location of the furnace and the ducts, give the readers of AMERICAN ARTISAN an opportunity of visualizing the work and the extent of the progress made to date on this important adjunct to warm air heating.

Just a few short months ago, it will be remembered, the plans for this house were still in the embryo stages of development.

As is usually the case, a few men of vision with a thorough understanding of the needs of the industry long ago recognized the necessity

for a testing plant of the type now under construction. However, progress in the work depended upon their ability as salesmen to convince their fellow followers of the necessity and of their sincerity in asking the men in the industry to advance money for such a purpose.

To these men fell the job of perfecting the plans for the project, and how well they have succeeded is well illustrated on these pages.

The basement plan as shown is self explanatory and needs little further comment.

Moist Air and Fan Help to Make People More Comfortable.

Sometimes the man on the outside is better able to discern the salient points of an investigation or a series of experiments than those directly concerned. An illustration of this is an article by Dr. W. A. Evans,

formerly Commissioner of Health in Chicago, which appeared in the Chicago Tribune.

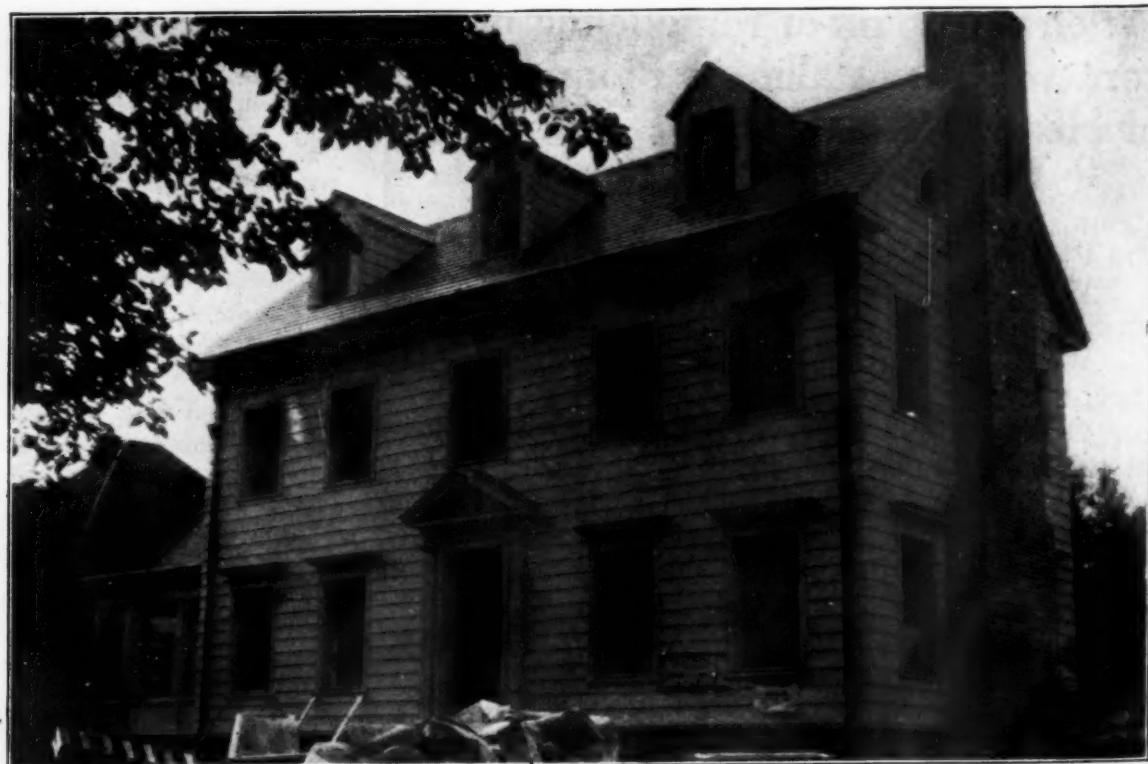
Basing his conclusions evidently on the tests conducted at the Bureau of Mines, in Pittsburgh, he writes:

Conditions of warm air have a powerful influence on the human body, an influence which records itself over a range from heat stroke at one end to grousing at the other.

The three qualities of air which are major factors in producing these effects are: temperature, humidity and drafts. Sayers and Harrington conducted very extensive experiments from which they obtained the following results:

A. Men at rest in air saturated with moisture and at a temperature of $91\frac{1}{2}$ degrees F. for one hour, with no air movement.

Effects on men:



Southeastern Exterior View of the Educational Research Residence at Urbana, Illinois, Showing Extent of Construction Work on July 27, 1924.

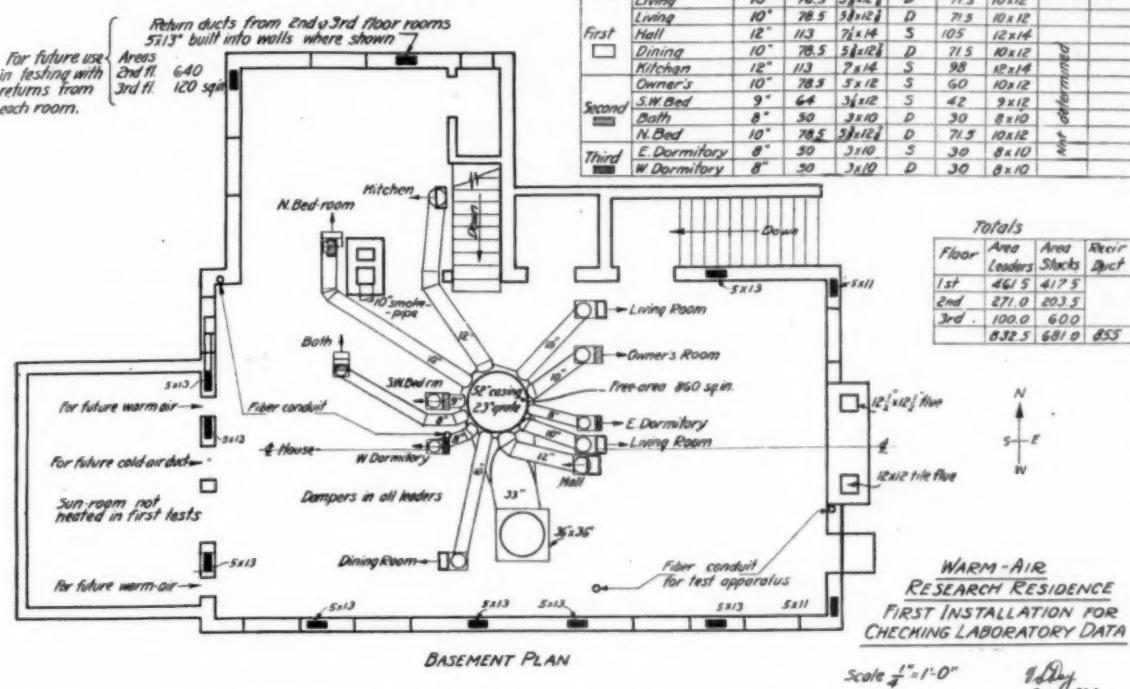


Diagram Showing Arrangement of Furnace and Air Ducts of Research House at Urbana, Illinois.

Increase in body temperature.
Moderate increase in pulse rate.
Profuse sweating.
Dizziness and weakness as after effects.

With Air Movement:

Slight or no increase in body temperature.

Slight increase in pulse rate.

Slight perspiration.

No after effects.

No ill effects at any time, but the noise of the fan was complained of.

The conclusion is that when people live in air that is saturated with moisture and is 91½ degrees they will be comfortable if the fans are working or the breezes are blowing.

B. Same conditions, except the temperature of air was 95.

Still Air:

Increase in temperature of the body.

Marked increase in pulse rate.

Very profuse sweating, clothing being saturated with sweat.

Sweat in shoes.

Dizziness on movement.

Rapid respiration.

Chilling sensation.

Draft of 250 to 600 Feet Per Minute:

Slight or no rise in body temperature.

Slight or no rise in pulse rate.

Profuse sweating.

No untoward symptoms.

Conclusion: People can stand saturated air at 95 degrees if they stay in a draft.

C. Same conditions, except air at 98½ degrees.

At this temperature not even moving air made conditions tolerable. In moving air, there was an increase in body temperature, an increase in pulse rate (in one case up to 183), very profuse sweating, dizziness. No work could be done at this temperature.

D. Same conditions, except air at 100 degrees.

Still Air:

Body temperature rose to 102.3 degrees.

Pulse rate rose to 152 to 175.

Profuse sweating.

Early appearance of dizziness and weakness.

When the air was set in motion (200 to 800 feet per minute) the people under experiment said they were made more uncomfortable. None of them was able to spend one hour in the room where the hot, wet air was in motion.

The general conclusion is that it does good to use fans when the air

is very wet, so long as the temperature keeps below 95 degrees. At temperature between 95 degrees and 99 degrees, fanning does very little good, if any. At temperature 100 degrees and over breezes do more harm than good. Working conditions are moderately good where the temperature is under 95 degrees, provided the air is not saturated with moisture and provided there is a breeze.

Quick Furnace, Des Moines, Issues New Pipe and Fittings Catalogue.

The Quick Furnace and Supply Company, Des Moines, Iowa, has issued its new catalogue No. 21 of furnace pipe, fittings, registers and accessories.

Baseboard registers, one-piece Quick heater registers, register boxes, Hart & Cooley floor registers with list prices are all shown. Side wall registers, cold air intakes, ventilating plates and pipeless furnace gratings are found.

One section of the catalogue is given over to Lamneck simplified furnace fittings.

Copies of this valuable issue may be had on request.

**And Still Help
Comes for L. H. K.'s
Installation Problem.**

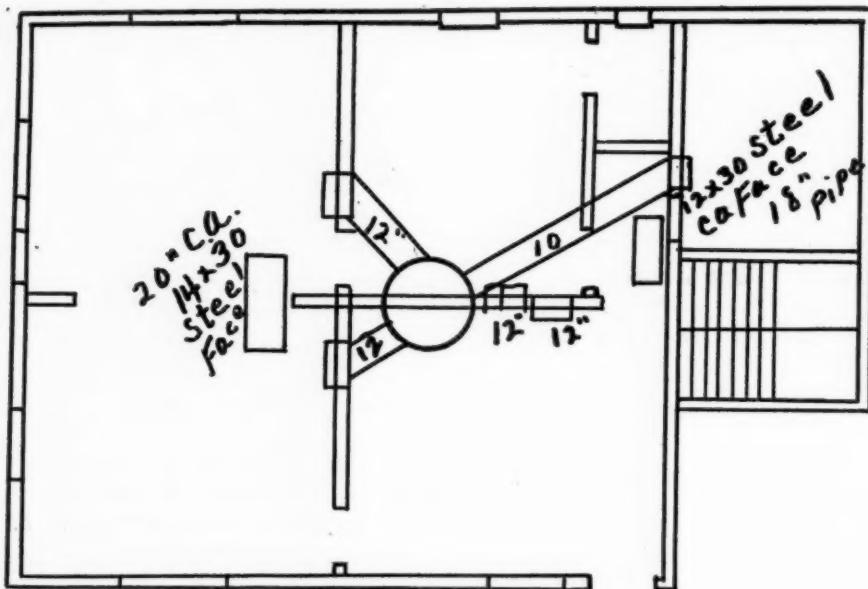
In the issue of AMERICAN ARTISAN for July 19th there appeared an appeal for help on a furnace installation which refused to function properly, coming from L. H. K.

In following issues of AMERICAN ARTISAN many solutions were pub-

doing it for myself, better heating would be done generally if each job was made a personal one with the heating contractor.

If one would throw his prejudice to the winds, and try one job with short cold air pipes instead of long ones, substantial improvements would result to the heating trade.

I hope I have made my drawing sufficiently plain so that you can get



Another Solution to L. H. K.'s Problem.

lished, showing how brother furnace installers had come to the assistance of L. H. K.

The latest solution is that received from C. F. Malone, 2303 West Third Street, Davenport, Iowa, salesman for the International Heater Company, Utica, New York.

Mr. Malone's letter follows:
To AMERICAN ARTISAN:

I have been in the heating business over 30 years, have been a reader of AMERICAN ARTISAN for these many years, at one time I was a subscriber, but not of late years, in all that time I have never taken any part in the discussions that have appeared from time to time, but now that I have gotten over my stage fright I want to add my little mite to problem of L. H. K.

This seems to me to be a very easy problem to solve, and I have drawn in my ideas and if it be worth anything to any one, I shall be glad to have been of some assistance, this is laid out as I would do it, if I were

the meaning out of them, thanking you for the opportunity of displaying these talents, I remain,

C. F. MALONE.

Davenport, Iowa.

**Security Oil Burner
Booklet Contains
Up-to-date Data.**

L. W. Millis, secretary of the Security Stove and Manufacturing Company, Kansas City, Missouri, announces that his company has begun the production of an oil burner called the Security oil burner, suitable for warm air furnace installations.

A small booklet descriptive of the advantages of heating with oil and illustrating the Security oil burner has been prepared by the company and is now available for distribution.

The oil burner, the pamphlet explains, is made an integral part of the furnace.

Copies of the oil burner booklet

may be had by sending your request.

L. W. Millis, it will be remembered, contributes many articles to AMERICAN ARTISAN on the study of scientific warm air heating.

What Is the Best Method of Insulating Outside Casing of Pipe Furnace?

To AMERICAN ARTISAN:

We should like to receive your opinion as to the best method of insulating the outside casing of a pipe furnace. Also, the best method of determining definitely as to whether the castings of a furnace are leaking smoke, or whether the smoke conditions are caused by faulty flue.

We are regular readers of your magazine and have received a great deal of benefit from it.

GRANITE LUMBER & HARWARE,
Per Clyde Hansen.
Salt Lake City, Utah.

**Federal Trade Commission
Goes After Label Frauds.**

The Federal Trade Commission has been quite active this year in combatting a trade abuse that appears to have attained considerable dimensions, if one may judge by the number of complaints that it has filed in the last few weeks. These complaints are directed at the use of misleading labels and advertising matter, designed to create an impression on the part of the prospective customer that he is buying goods directly from the manufacturer and saving the middleman's profits. The distributors sometimes carry pictures of factories on their labels under which they print some such slogan as "Direct from Factory to Consumer." Some of them even designate themselves as "manufacturing companies." In the complaints which it has filed the Commission charges that none of the concerns named manufactures the articles which it offers for sale and that such labels and advertising are misleading and detrimental to the business of dealers who do not resort to such tactics, and therefore constitute unfair competition within the meaning of the anti-trust laws.

Nickel Zinc Is Suitable for Many Purposes But Requires Special Care in Handling.

Kothe Describes in Detail Principal Methods of Bending and Forming This New Metal.

THE vast majority of sheet metal tradesmen are mostly acquainted with galvanized iron and tin. This is because this sort of metal has been most popular, and naturally most everybody clings to the work that they know most about.

In late years the zinc industries have put forth their product, and

one of these is "nickel zinc." This is a zinc base plate, the same as we see advertised for roofing, for refrigerators, etc.; but on the exposed side it possesses a film of nickel coating. It is this coating of nickel that makes a harder, tougher surface, and one that can be kept in a high polished finish for a long time.

Because of this high polished mirror-like finish, the metal becomes especially suitable for a great variety of household and manufacturing purposes. It also requires special skill in handling by the workman, and for this reason a series of articles have been prepared showing the treatment of nickel zinc.

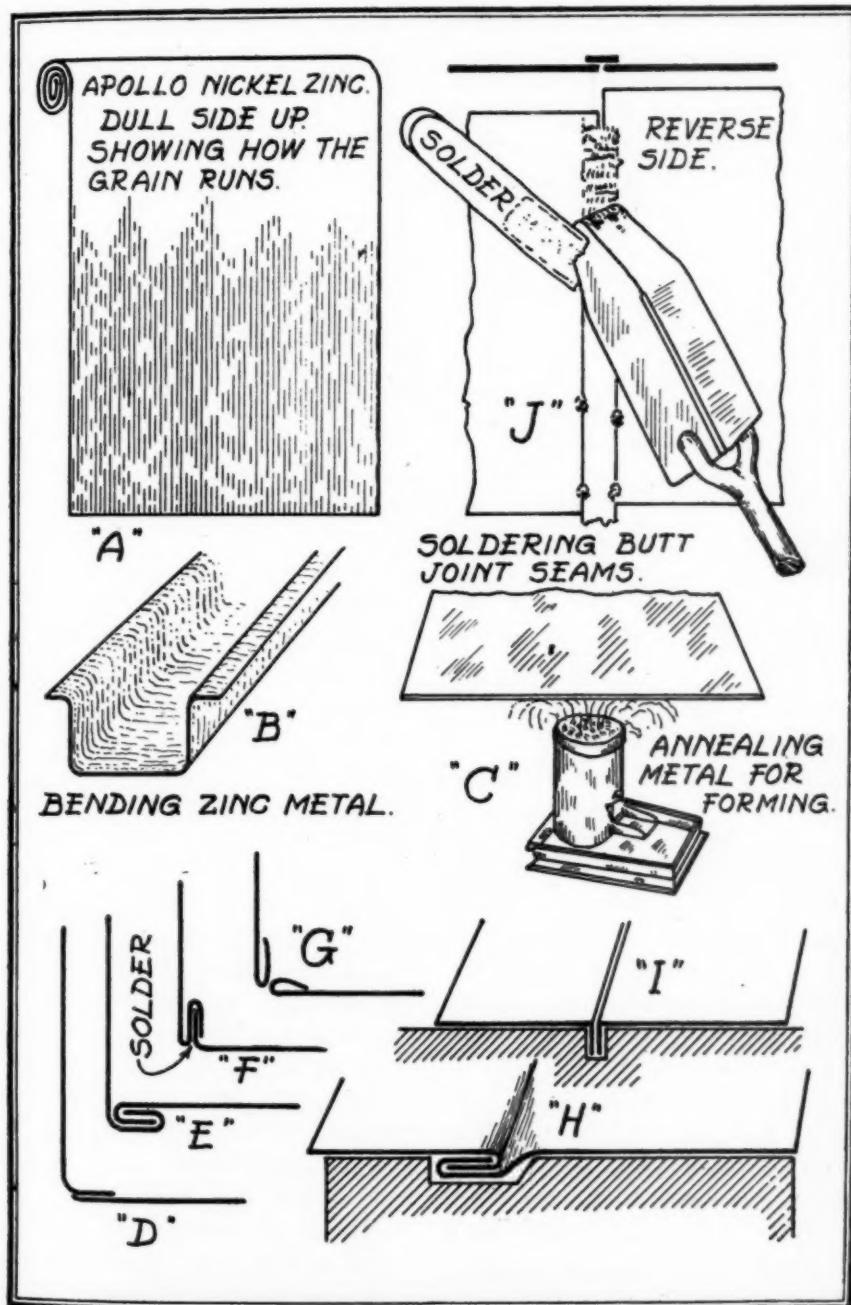
In the first place, zinc is a mineral. It is mined from the earth. These mined products are then ground into a fine powder, washed, boiled and refined, and then smelted into cakes or blocks called pigs. These rough, heavy cakes are shipped to finishing mills where the metal is worked up into all imaginable articles. But sheet zinc is rolled much the same as the base plate for tin or iron, and in this process the grain runs with the roll.

Zinc, by the nature of its atomic structure, is a soft metal, but quite brittle and without much tensile strength. Zinc is also affected by heat and cold; with heat, it has a high rate of expansion, and the metal is soft and pliable. But under cold weather conditions, the zinc becomes quite springy and brittle, and will easily crack or break. For this reason, all exterior zinc work must be given ample freedom, joints must be made to allow perfect freedom in the movement of the metal and still shed the weather.

Nickel Coat Strengthens Zinc.

Now, where a film of nickel is added to the zinc surface, that being harder and tougher, it helps retain the zinc base plate in a more uniform condition. The nickel will reflect the heat and cold more readily, while pure zinc absorbs it freely, and the nickel coating prevents the free expansion or contraction. For sanitary purposes the highly polished finish is especially desirable.

From a working point of view,



Showing Details of Joints of Nickel Zinc.

nickel zinc must be handled much the same as German silver, only in that the zinc is softer and carries a lower melting point. But the polished surface must be thoughtfully handled, as it will scratch, mar or buckle by lack of judgment in handling.

Possibly one of the first things to observe is the direction the grain runs, and this is always noticeable on the reverse side of nickel zinc; it is assumed to run in the direction of the roll as at "A" in the accompanying illustration.

Bend Across Grain.

So all bending should be made across the grain, as diagram "B" shows, not making the bends too sharp or bend too far over, and so require straightening, as this straightening weakens the zinc structure. It is always best to work the metal a little less than square rather than over square, and where considerable work must be bent the brake or folder should be adjusted for making slightly curved corners.

In cold weather, when the metal is stiff and springy, simply pass the sheet over the firepot, or over a gas jet, as at "C." This slightly anneals the metal and it should be worked up immediately before it gets cold again. In winter it is often desirable to use gloves and raise the temperature in the metal and work fast to shape up before it sets and becomes brittle and springy.

Seams can be made with nickel zinc identical to those used for tin, galvanized iron or copper. The only condition being carefulness in the bending process, to see that no cracks result, and not to close the seam down too tight. They should be loosely made. Such joints are shown at "D" which is a lap soldered joint; "E" a loosely made double seam; "F" a slip soldered seam and "G" a butt edge soldered seam.

(To Be Continued.)

Capital tied up in obsolete and slow moving merchandise has little opportunity to earn a profit; and profit is the objective of business investment.

Pittsburgh Plus Ruling Will Not Lower Steel Prices in West, Says Kaylor.

Steel Products Are on Lower Comparative Basis Than Any Other Manufactured Products as Against Prices in 1914.

A NUMBER of congratulatory letters have been received by us referring to the editorial which was published in the August second issue, of AMERICAN ARTISAN AND HARDWARE RECORD. This editorial was written after the Federal Trade Commission had issued its rule against the "Pittsburgh Plus" method of price quoting on steel, and we stated that the ruling, even if it was allowed to stand without a lawsuit on the part of the United States Steel Corporation, would in no sense affect the price to be paid by the consumer or fabricator.

We quote herewith a letter from R. J. Kaylor, Publicity Director of the Youngstown Sheet & Tube Company, one of the largest "Independents" in the steel field:

A. G. PEDERSEN, Editor,
AMERICAN ARTISAN AND
HARDWARE RECORD.

I wish to congratulate you on the article appearing in the August 2nd number of your publication in regard to the Pittsburgh basing matter.

So much has been written on this subject by people who either did not understand the situation or were not anxious to state the facts, that the simple truth is refreshing.

This system has been useful to both producer and consumer as a means of readily determining relative prices quoted on steel products, and its use has therefore had a stabilizing effect on the industry. It has not been used to prevent prices from going down as often as to prevent them from going up beyond reason.

So far as its effect on the industry is concerned, the recent ruling is not important, except in that it has done away with a method by which producer and consumer alike were protected in the matter of price. Buyers of steel benefited from it because they are not usually in a

position to figure complicated freight rates, advantageous routes and methods of shipment, and other things that enter into transportation, so well as the manufacturers of steel.

As to the tendency of this practice to maintain prices in the steel industry, it is only necessary to know that prices of steel products in February of this year were on a lower basis, compared with those prevailing in 1914, than the products of any other industry. That is the last date on which comparative figures compiled by the Government are available, and those issued at that time showed that steel products and agricultural products were on a basis of 143, as compared with 100 in 1914, while the average advance in other lines had been about 66. Since that time, and long before the ruling of the Federal Trade Commission referred to, steel products had declined materially, so that they are now relatively the lowest in price of anything the American public buys.

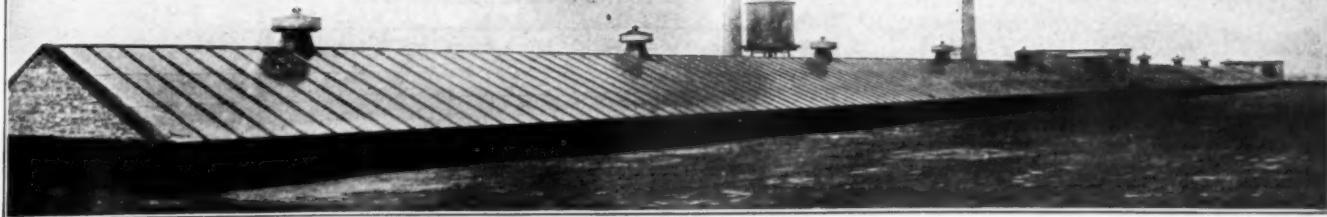
Even if these figures were not available, the fact that statements for the last quarter showed that very few steel companies earned their dividends should be sufficient to convince the public that the "Pittsburgh Plus" plan did not help much to maintain prices in the steel industry.

If the ruling is not contested the probable result will be the establishment of two basing points instead of one—Pittsburgh for the Eastern District and Chicago for the Western District. But it is still likely that the basing point used will not affect the result, since it is necessary for steel producers to get the highest prices they can for their products delivered to the point of consumption or distribution in competition with other manufacturers, wherever they may be located.

R. J. KAYLOR.

Bringing Daylight Through The Factory Roof

By J.M. Mattingly, Sheet Metal Engineer



Two Great Skylights in the Assembly Plants of the Haynes Automobile Company, Kokomo, Indiana, Make It Possible for Those Within to Work in the Full Light of Day Instead of in Semi-Darkness or Artificial Light. How the Difficult Engineering Problems Involved in the Construction of These Enormous "Roof Windows" Were Solved by the Engineering Department of the Sheet Metal Company That Built Them, Is Herewith Briefly Told.

THE following article was prepared by Joseph M. Mattingly, of the Smither Roofing and Sheet Metal Company, Indianapolis, and appeared in the August number of the "Pure Iron Era," the house organ of the American Rolling Mill Company. Mr. Mattingly is well known among sheet metal contractors, having served as vice-president of state association.

His very interesting and instructive article follows:

There is a vast difference between the factories of today and those of a few decades past, in fact, one might say the difference is as great as that between day and night and be literally correct; for the dark, gloomy, unventilated factories of years ago have given way largely to airy structures designed to admit freely the light of day.

In order to get the greatest possible amount of daylight many factories are provided with enormous skylights, the construction of which has tested the ingenuity of the engineer and also that of the metal worker. Notable examples are the two huge skylights which cover the traveling craneway in the center of the assembly building of the Haynes Automobile Company in Kokomo, Indiana.

The building was designed and built by the M. J. Hoffman Con-

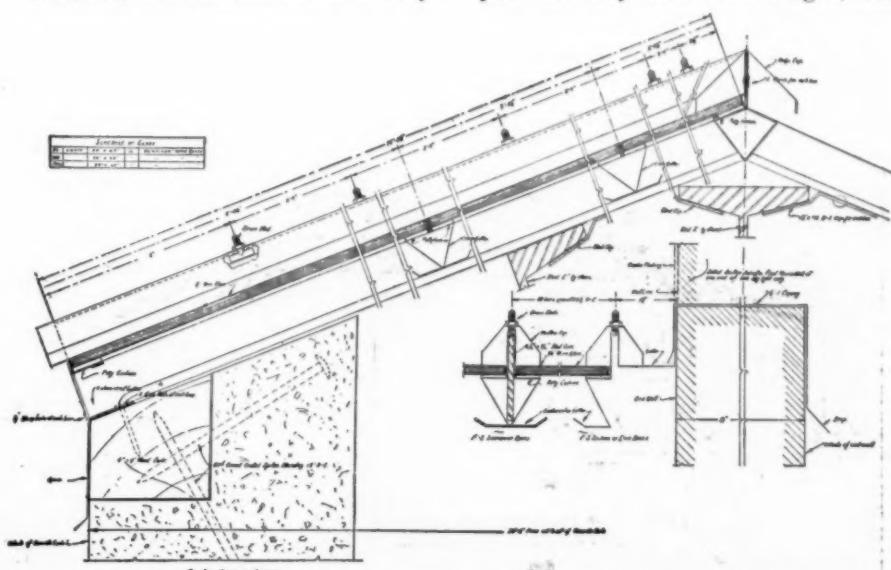
struction Company, Evansville, Indiana, but the skylights, including the ventilators, were designed, fabricated and erected by the Smith Roofing and Sheet Metal Company, Indianapolis, Indiana.

The officers of this company, who maintain that an engineering department in connection with a sheet metal business is just as essential as the tools and cost-keeping system, were called in by the builders and told what was contemplated, and then asked to give their solution of the problem.

Sketches, with specifications and estimates, were submitted in a very

short time, met with the requirements, and were approved after careful consideration by representatives of both the owners and the engineers.

The next step was to prepare necessary working drawings and shop details, which are shown herewith and will be briefly explained. As stated above, all that was provided to work from at the start was a "hole in the roof," an unusually large one, 28 feet 2 inches by 198 feet 4 inches. Building skylights of these dimensions required careful consideration, for they must support not only their own weight, but



Drawing Showing Details of Construction of the Enormous Skylight and the Concrete Curb on Which It Rests, of the Haynes Automobile Company's Assembly Plant, at Kokomo, Indiana.

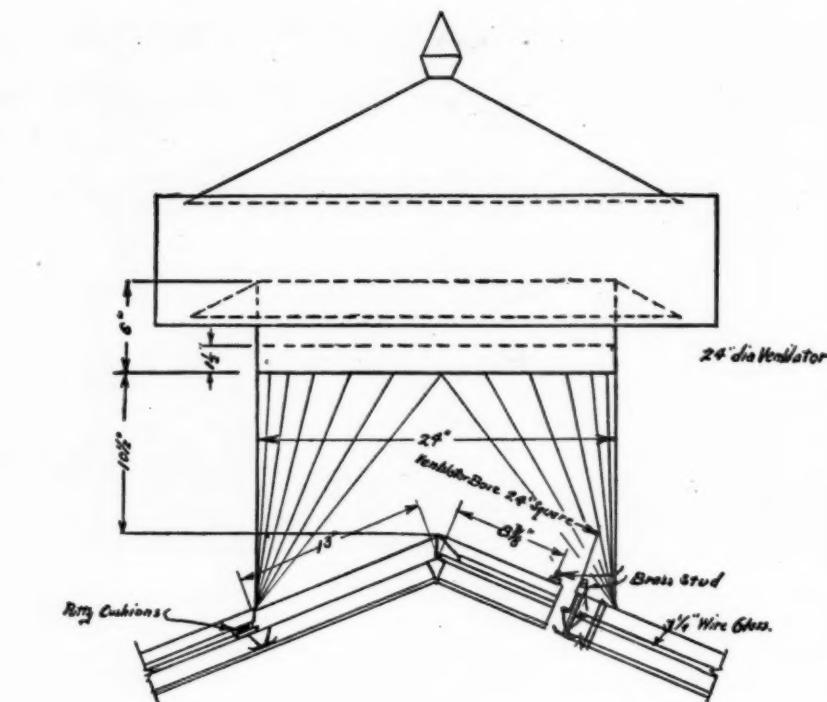
also the wind and snow load; and last, but by no means the least, the vibration caused by the movements of a traveling crane of large carrying capacity.

The weight per square foot of the completed skylight was ascertained. This information was passed to the structural engineer of the building, who, in turn, furnished data and designed the required amount of steel trusses and purlins. The process of arriving at the proper design and proportion of the concrete curb was also furnished through the same source. The remainder of the engineering task fell to the skylight builder.

As will be noted, the 4-inch by 4-inch wood nailing and curb strip is fully protected from the outside elements, and consequently will render service for an indefinite period of years.

In the construction of these skylights 24-gauge galvanized "Armco" ingot iron was used for all sheet metal parts, including the ventilators. The steel corners were made from $2\frac{1}{2}$ -inch by 3-16-inch flats in two parts; the joints were butted and so cut as to make the same rest over steel purlins, forming a bearing for them.

These cores were inserted in the bars and riveted with 4-pound flat headed rivets through the web of the bars at intervals of about 2 feet C-C. The weather caps were so designed that they can be readily removed if it is necessary to replace broken glass. A specially designed

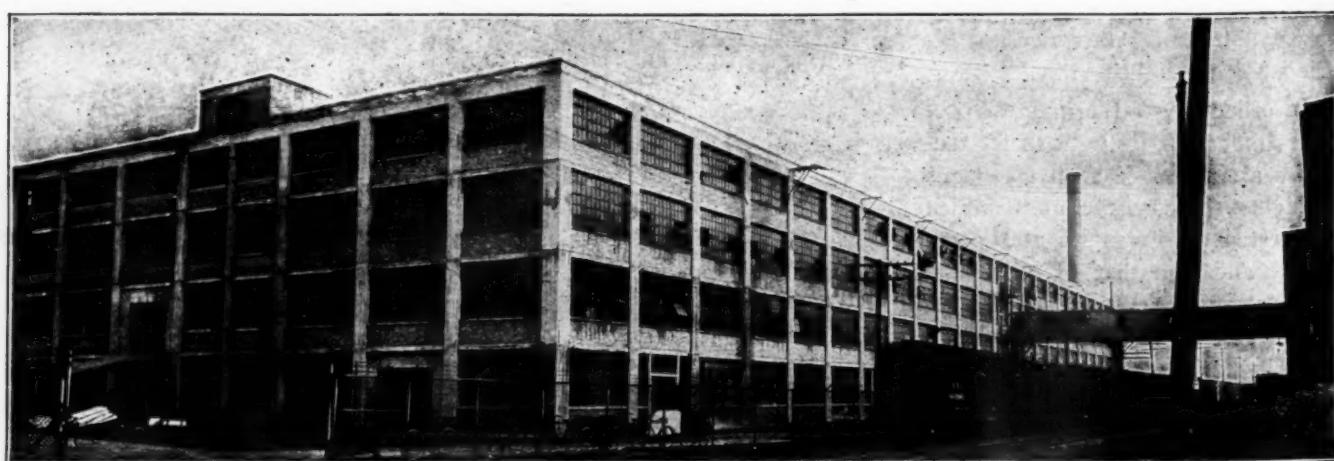


SECTION & ELEVATION OF VENTILATORS.
Elevation and Sectional Drawing of the Ventilator Surmounting the Skylight on the Haynes Assembly Plant.

bronze "T" bolt with conical point on threaded and hexagon nut was used for fastening the weather cap in place. This bolt, as shown on the drawing, was attached to the web of the bar by punching a hole at the top of the web and inserting the bolt before placing the core in the bar. The bars were attached independent of each other to the steel purlins by means of a 2-inch by $\frac{1}{8}$ -inch steel clip, forming a clamp to the flange of the steel purlins. These clips were riveted to the bottom of the bar with two three-pound flat head rivets.

At the top of the bar a lap is allowed on each side of the web, which is turned out. The bars on each side of the skylights intersect at the ridge with the ridge bar separating them. These laps are riveted through the web of the ridge with two 3-pound flat head rivets making a solid, compact joint. The bottoms of the bars are connected to the curb and nailed to the wood anchor strip with two $1\frac{1}{2}$ -inch No. 10 galvanized nails and soldered.

As will be noted, ample provisions are made to take care of the conden-



A General View of the Assembly Room, Haynes Automobile Company, Kokomo, Indiana.. The Construction of the Huge Skylight on This Building Is Described in the Accompanying Article.

sation. Included in this part of the design are five 24-inch diameter "storm band" ventilators with rectangular bases. It is the opinion of the designers that vent openings in the center of "peak" of skylights will reduce the amount of condensation to a minimum.

Special attention is called to the manner of attaching the vent bases to the skylight bars. The sides of the bases have a half weather cap formed on them. This base is set over the bars and held in place by the same "T" bolts that are provided for the weather caps. A cap flashing is also made on the lower sides of the base forming a cap over the cross bar, which is the same design used for the cross bars in the remainder of the skylights. It will be noted that the end walls are of brick and that the end bars are the same girth as the other bars, except that they are changed to form a gutter and a flange which is flashed with counter-flashing or apron on the coping, as the case may be. The skylights are glazed with $\frac{1}{4}$ -inch wire glass imbedded in putty.

One of the outstanding engineering features in connection with the designing of these skylights is the fact that a standard for the parts was adhered to, making it possible to utilize standard stock sizes of materials and thus eliminate all waste and bring the cost of production down to the minimum.

Hollow Metal Window Makers Will Meet in Chicago Friday September 19th.

A special meeting will be held of the National Association of Manufacturers of Approved Hollow Metal Window Frames and Sash in Chicago on Friday, September 19th.

The morning session will meet in the rooms of the Chicago Sheet Metal Contractors' Association, third floor, Chamber of Commerce Building; in the afternoon the members will witness a test of a new type of hollow metal windows at the Underwriters' Laboratories, 207 East Ohio Street.

San Francisco Building Spreads Canvas to Protect Pedestrians from Dangerous Terra Cotta Cornice.

Sheet Metal Contractors' Local of Western City Calls Attention of National Association to Dangerous Spectacle.

SOME time ago AMERICAN ARTISAN carried an account of the death of one person and injury to several others due to the falling of a stone cornice from the top of one of the buildings at St. Louis, Missouri.

Later a similar accident was reported through these columns of a stone cornice falling from a building in Chicago, with numerous injuries to pedestrians passing in the street below.

There are doubtless many other instances of like accidents of which

knowledge is seldom if ever had.

Paul L. Biersach, chairman of the Educational Publicity Committee of the National Sheet Metal Contractors' Association has called attention to a near accident from a falling cornice on a building in San Francisco, California.

Fortunately for the pedestrians using the street below the building shown in the foreground, the dangerous condition of the stone cornice was discovered before any damage was done.

To show how well all sheet metal



Building in San Francisco, California, with Dislodged Terra Cotta Cornice Endangering Lives of Pedestrians.

contractors' locals throughout the country are coöperating with the national association in bringing all such incidents to the notice of the trade, the illustration shown was sent to the national secretary from the Sheet Metal Contractors' Association of San Francisco. It was then forwarded to Chairman Biersach of the Educational Publicity Committee.

The cornice on the main building is of terra cotta. It became loose either through deterioratoin or bad

construction and was a menace to those using the sidewalk below. The canvas shown was placed on the building to catch the particles which came loose.

There is a great persuasive power in favor of sheet metal cornices in photographs of this kind and whenever they are encountered they should be brought to the attention of the sheet metal industry, and used by them to influence the architects in favor of using sheet metal cornices in leiu of stone or terra cotta.

Steel Sheet Makers Plan Great Reduction in Number of Gauges, Sizes and Types.

Proposed Program Provides for Cutting Down the Items From 1,630 to 185.

THE Simplification Committee of the Sheet Steel Industry will recommend drastic reductions in the number of sizes and gauges of sheet steel, it is indicated in reports made to the Division of Simplified Practice of the Department of Commerce. Final action on the recommendations by the industry itself has not been completed, but will be done so in the near future, it was indicated.

The progress made to date indicates that in the three chief products, galvanized flat sheets, one-pass cold rolled box annealed sheets and blue annealed sheets, the reduction favored by the industry will be from 1,630 items to less than 185 items, or one-ninth of the variety now made. It also was forecasted in the report that about one-fourth of the variety of items will be reduced from the present 199 items of galvanized and painted roofing.

Work on the part of the sheet steel industry toward this end was begun more than a year ago, but it has been speeded up since the Division of Simplified Practice, in co-operation with the Sheet Steel Simplification Committee, made a careful analysis of actual sales for each item produced over a period of six months. This analysis, presented at the meeting last May of heads of all of the mills making sheet steel, at

White Sulphur Springs, West Virginia, showed that in the past a wide range of items had been listed in which the demand was negligible, and that production could be concentrated on less than one-fourth of the items previously listed without injury to manufacturers or consumer.

W. C. Carroll, Vice president of the Inland Steel Company, Chicago, is Chairman of the Sheet Steel Simplification Committee, and the other members are F. O. Schoedinger, of Columbus, Ohio; W. W. Sebald, American Rolling Mill Company, Middletown, Ohio; W. E. Scott, Youngstown Sheet & Tube Company, Youngstown, Ohio; and L. D. Mercer, United Alloy Steel Corporation, Canton, Ohio. W. S. Horner and Walter W. Lower, President and Secretary, respectively, of the National Association of Sheet and Tin Plate Manufacturers, coöperated in the survey.

The work of the Committee has been followed with keen interest by the federal specifications board sub-committee on sheet metals and metal coated sheets, and the final report may be reflected in coöperative action by the federal specifications board.

Turn your worries into thoughts and your liabilities will become assets.

Making a False Statement About Your Business, to Obtain Credit, Is a Criminal Offense.

Any business man who makes out a false financial statement and puts it in the mails is committing a criminal offense against the United States Government and can be prosecuted and sent to prison.

A statement is false when it either underrates one's liabilities or overrates one's assets. The innocent false pretenses nearly all come from taking too rosy a view of the value of one's holdings, whatever they may be. A favorite plan is forgetting depreciation.

Wisconsin Sheet Metal Men Have Fine Time at Annual Outing Near Milwaukee.

The Annual Outing of the Milwaukee Sheet Metal Contractors' Association became a state affair this year as a considerable number of contractors from other cities attended, such as Madison, Sheboygan, Waukesha and others, and there were several guests from outside of the state, among them being Arthur Stremel, of Stremel Brothers Manufacturing Company, a large sheet metal contracting firm in Minneapolis.

A complete story of the outing with pictures of some of the "notables" will be published in the August 30th issue of AMERICAN ARTISAN.

Matthiessen & Hegeler Issue New Sheet Zinc Price Effective August 20.

The Matthiessen & Hegeler Zinc Company, La Salle, Illinois, have issued a new zinc price list effective August 20th. The base price on sheet zinc effective on the date mentioned is \$9.85 f. o. b. La Salle.

Free Storage Time in Chicago Reduced to One Day.

The Interstate Commerce Commission August 19 justified schedules of carriers reducing from two days to one day the free time al-

lowed in connection with team-track storage charges at Chicago on cars held for reconsignment, diversion of reshipment, or placed to complete loading or to partly unload.

The Chicago Board of Trade and Chicago Hay Exchange protested the schedules. The commission said

team track storage charges on a car held for reconsignment for five days now were \$4 while the schedules found justified would increase the charges to \$6.

The protestants contended that the increase would result in discrimination.

President Markle Appoints High-Grade Men to Standing and Special Sheet Metal Committees.

*National Association of Sheet Metal Contractors
Will Have Its Affairs Well Looked After.*

PRESIDENT W. C. MARKLE, of the National Association of Sheet Metal Contractors, has appointed the following members to serve on the stand and special committees as named:

**Standing and Special Committees,
1924-1925, National Association
Sheet Metal Contractors.**

Warm Air Furnace.

J. H. Hussie, Chairman, 2407 Cuming Street, Omaha.

E. B. Langenberg, Langenberg Manufacturing Company, 4519 North Euclid Avenue, St. Louis.

Gust Krack, 1018 West 19th Street, Erie, Pennsylvania.

F. J. Hoersting, 1133 West Third Street, Dayton, Ohio.

S. P. Moncrief, 62 Hemphill Avenue, Atlanta, Georgia.

Vocational Education.

Louis Luckhardt, J. D. McIlroy Sons, 800 Second Avenue, Pittsburgh.

N. A. Lichty, Lichty Metal Products Company, 922 Sycamore Street, Waterloo, Iowa.

Max Walten, Wolfsteiner Company, 1312 "W" Street, Northwest, Washington, D. C.

R. S. Hahn, 236 Church Street, Easton, Pennsylvania.

F. I. Eynatten, A. A. Bushnell & Son, 1317 South Washington Street, Peoria.

Fire Prevention.

John Bogenberger, Consolidated Sheet Metal Works, 661 Hubbard Street, Milwaukee.

George Thesmacher, Riester & Thesmacher, 1526 West 25th Street, Cleveland.

G. B. Detterman, J. W. Wagner's Sons, 1145 South 7th Street, Louisville, Kentucky.

H. C. Knisely, 1912 South Western Avenue, Chicago.

G. A. Wieland, Capital Art Metal Works, 1133 Howard Street, San Francisco.

Trade Relations and Policy.

E. L. Seabrook, 608 Chestnut Street, Philadelphia.

G. I. Ray, Box 1318, Charlotte, North Carolina.

William Stechow, Shaw & Stechow, 904 Central Avenue, Cincinnati.

B. B. Van Houten, 320 Broadway, Macon, Georgia.

Ernest Gichner, 1107 "E" Street, Northwest, Washington, D. C.

F. E. Treuchet, 33 Sanford Street, Springfield, Massachusetts.

Overhead Expense.

W. H. Tinney, 63rd and Woodland Avenue, Philadelphia.

John Foster, 217 South 4th Street, Springfield, Illinois.

G. P. Werner, 1628 Avenue "C", Galveston, Texas.

Samuel Warren, Warren Company, 411 East 10th Street, Erie, Pennsylvania.

R. E. Piper, 1522 West Broad, Richmond, Virginia.

Labor.

W. F. Angermyer, 714 Homewood Avenue, Pittsburgh.

J. Weigel, 664 East McMillen Street, Cincinnati.

W. E. Lamneck, 416 Dublin Street, Columbus, Ohio.

H. T. Halverson, 200 Federal Street, Portland, Maine.

G. W. Frazier, J. C. Bayer Company, 204 Market Street, Portland, Oregon.

Sheet Metal Cornice.

George Harms, F. Meyer & Brother, 1313 South Adams Street, Peoria.

P. F. Brandstedt, 222 John Marshall Place, Washington, D. C.

H. C. Knisely, 1912 South Western Avenue, Chicago.

J. C. Gardner, 37 Kentucky Avenue, Indianapolis.

George Thesmacher, 1526 West 25th Street, Cleveland.

Slogan.

N. A. Lichty, 922 Sycamore Street, Waterloo, Iowa.

E. L. Seabrook, 608 Chestnut Street, Philadelphia.

Julius Gerock, Jr., 1252 South Vandeventer Avenue, St. Louis.

G. I. Ray, Box 1318, Charlotte, North Carolina.

J. A. Pierpont, 310 12th Street, Northwest, Washington, D. C.

Educational Publicity.

P. L. Biersach, Consolidated Sheet Metal Works, 661 Hubbard Street, Milwaukee.

W. A. Fingles, 29 South Howard Street, Baltimore.

Louis Luckhardt, J. D. McIlroy Son, 800 Second Avenue, Pittsburgh.

George Harms, 1313 South Adams Street, Peoria.

Tablet.

J. H. Hussie, 2407 Cuming Street, Omaha.

George Harms, 1313 South Adams Street, Peoria.

Herbert Symonds, 3117 Minnesota Avenue, St. Louis.

By-Laws.

J. C. Gardner, 37 Kentucky Avenue, Indianapolis.

Walter Budd, Budd-Piper Company, Durham, North Carolina.

J. E. Merrick, Falls City Corrugating and Roofing Company, 800 East Madison, Louisville, Kentucky.

LeRoy Danzer, Danzer Metal Works, Hagerstown, Maryland.

R. E. Pauley, Metal Products Company, Mason City, Iowa.

Standardization.

George Harms, 1313 Adams Street, Peoria.

H. F. Drogkamp, 1515 Fond du Lac Avenue, Milwaukee.

W. A. Fingles, 29 South Howard Street, Baltimore.

Allred Manufacturing Company, Succeeds to Business of Sullivan-Geiger Company.

The business, which for many years has been conducted by the Sullivan-Geiger Company, manufacturers and wholesalers of sheet metal products, at 9 to 21 East Henry Street, Indianapolis, has been taken over by the Allred Manufacturing Company.

Edward Allred was factory superintendent of the old company and heads the new company. Among their products are the well known Oval stove pipe reducers and the Centennial rain water cutoffs, which have been advertised in AMERICAN ARTISAN for many years.

Sheet Metal Contractors of Wisconsin Hold Meeting.

The August meeting of the Wisconsin state board of directors was called to order at the Builders' and Traders' Exchange Wednesday, August 6th, at 3 p. m. by President William Gehrke, with a large attendance present.

The minutes of the previous meeting were read and ordered placed on file.

The report of the national secretary was also read and approved and ordered placed on file.

The correspondence with the Charcoal Iron Products Company regarding the adoption by this association of their charcoal iron sheet as a standard was ordered referred to the national secretary.

A motion was made by Mr. Jeske and seconded by Mr. Biersach that the offer of the Apollo Metal Works of La Salle, Illinois, to devote two pages of each issue of the *Apollogram* to the Wisconsin association news be accepted.

It was moved by Mr. Biersach and seconded by Mr. Jeske that the

following members be admitted to this association and their names entered on the roster:

Koepke Brothers, Sheboygan.

Racine Sheet Metal Works, Racine.

Otto Melcher, Racine.

N. A. Ording, Independent Sheet Metal Works, Sheboygan.

The treasurer reported a good substantial balance on hand.

A motion was made by Mr. Biersach and seconded by Mr. Tolg that the bill from Jacks letter service of \$31.12 be allowed.

A motion was made by Mr. Bier-

sach and seconded by Mr. Jeske that the secretary notify the secretary of the travelers' auxiliary, to invite all of their members to the coming picnic.

A motion was made by Mr. Jeske and seconded by Mr. Hoffman that the state association pay the picnic expenses for all attendants outside of Milwaukee members.

After a general discussion on the coming picnic, to be held at Kneppel's Grove at Mequon, Wisconsin, August 21st, it was moved by Mr. Biersach and seconded by Mr. Jeske to adjourn.

**World Zinc Conditions as of August 1st, 1924,
Reviewed by A. J. M. Sharpe, London.**

Mr. Sharpe Is Honorary Member and Honorary Foreign Correspondent of American Zinc Institute.

STEPHEN S. TUTHILL, secretary of the American Zinc Institute, 27 Cedar Street, New York, submits the following report on world zinc conditions obtaining under date of August 1st, 1924, and compiled by A. J. M. Sharpe of the International Metal Service, London:

The London zinc market maintains a steady tone, although the quotation is not much higher on the month.

The aim of British dealers has indeed been to peg the price back so as to be able to buy the tonnage of American metal they wanted without unduly inflating the St. Louis quotation. With the British consumption again up to 13,000 tons monthly or better, it will be necessary to import United States slab zinc regularly to meet the difference between consumption and domestic output plus continental imports.

Practically all the Belgian zinc shipped to England is delivered under running contracts based on the London monthly average price and the quantity is not susceptible to increase because production is now strictly limited by the ore supply.

So busy are British galvanizers that they have found themselves utterly unable to deal with the Ar-

gentine order for 45,000 tons to combat the locust pest. Properly coated, this order should consume 6,000 tons of slab zinc and I see no reason why it should not be booked by United States galvanizers.

In Germany all business is marking time and awaiting the outcome of the present reparations conference in London. There is a most confident feeling that on this occasion success will attend the diplomatic negotiations and that the new regime in France will not shipwreck the conference. Optimism is accordingly spreading to the commodity markets as it is certain that, if an agreement be reached on the lines of the Dawes' plan, a big buying movement in raw materials for German works will develop. So far as zinc is concerned, nothing is forthcoming from Germany and stocks are being carried there for future domestic needs. In upper Silesia things have gone from bad to worse and today all the smelters are closed, owing to the majority of the workers refusing to comply with the governmental decree to work 10 hours daily for the same wage as the 8-hour day hitherto in vogue.

Supplies of blende and calamine are scarce and much interest has been aroused by the importation into

Belgium of a trial shipment of Joplin-Miami concentrates. If it proves economical, no doubt substantial contract quantities will be fixed, but the comparatively high landed cost can only be offset by the good quality and cheaper smelting of this pure ore. It should not take long for the advantage in this business to be determined one way or the other. There will be no delay on the part of the Belgians, who are desperately anxious to develop a new source of ore supply to take the place of the Australian imports of 150,000 tons per annum which will finish about next April.

I estimate world stocks of zinc as at 1st of August to amount to 65,400 metric tons, made up as follows:

| | Metric Tons. |
|--|--------------|
| United States | 47,800 |
| Germany and Poland..... | 11,500 |
| Canada | 700 |
| Great Britain | 600 |
| Belgium | 1,500 |
| France | 600 |
| Scandinavia | 200 |
| Australia (including unsold shipments afloat) | 1,500 |
| Other countries | 1,000 |
| Total | 65,400 |

Terne Plate, Eaves Trough and Conductor Pipe Lines Are to Be Materially Simplified.

Simplification Committees in These Lines Will Probably Make Final Report in September.

RECENT progress of the sheet steel industry in a survey of gauges and sizes to determine the extent to which an excess of variety is said to exist is to be followed by similar steps with regard to terne plate and eaves trough and conductor pipe, it is stated by the Division of Simplified Practice of the Department of Commerce, which is co-operating in the movements.

Through the Metal Branch of the National Hardware Association, a Terne Plate Simplification Committee was appointed several months ago, which has been making a study of weights and grades. This committee will recommend the elimination of two weights or grades out of the eight now being made, it has been reported to the division. This recommendation will be offered at a forthcoming conference of the sheet steel industry for the action of manufacturers, distributors and users of this product. The committee consists of H. N. Taylor, N. & G. Taylor Company, Philadelphia, chairman; F. J. McNeive, W. F. Potts & Son Company, Incorporated, Philadelphia, and Lee D. Brueckel, Weirton Steel Company, Weirton, West Virginia.

The Eaves Trough and Conductor

Pipe Industry also appointed a Simplification Committee, which has made a survey, and is preparing to submit recommendations for eliminations from present variety at the same conference. The extent of these recommendations, it was explained, will depend upon action of the Sheet Metal Simplification Committee. The Eaves Trough and Conductor Pipe Committee is composed of A. Q. Moffatt, Wheeling Corrugating Company, Wheeling, West Virginia, chairman; H. O. Wilson, Berger Manufacturing Company, Canton, Ohio; E. H. Hoffeld, Ferdinand Dieckmann Company, Cincinnati; R. L. McHale, David Lupton's Sons Company, Philadelphia; Karl Roth, Braden Manufacturing Company, Terre Haute, Indiana, and E. L. Westwood, Wheeling Metal and Manufacturing Company, Wheeling.

While the date of the conference to act upon the recommendations of these committees has not been definitely fixed, it is expected that it will be about the middle of September.

The proprietor who doesn't have the good-will of his clerks seldom has the good-will of his community.

*What Every Individual Should Know About Credit,
by J. H. Tregoe.*

The mystic and the moral values of credit have been lost largely through its common usage. Society does not understand as a rule what a progressive factor credit has proved. When we place our fingers on any distinctive progress, whether it be in the field of commerce or the field of arts, credit has made it possible.

First, credit is one's word of honor. It is a personal element. It cannot be dissociated from the person or the enterprise using it in exchange. It is true when the character back of it is true, and it is false where character is lacking.

Credit is a convenience. It has supported the development of our industrial revolution. It has enabled us to move forward steadily from progress to progress until our industries and our income have surpassed all competition. It permits a wider use of capital. It holds in suspense the giving of value for the value immediately received.

Credit must be redeemed. The value immediately received must be covered by value in the future. If value is not given ultimately for value, then no exchange has taken place and confidence has been abused.

Holding in mind the redemptive feature of credit is its chief defense and makes possible its magnificent flow into channels of production and personal convenience.

They're Trying to Give You the Jolly Old Raspberry, Mr. Allen.

The following letter comes from J. P. Buckwalter, Macon, Georgia, who says Mr. Allen from South Dakota is in error:

To AMERICAN ARTISAN:

Your February 2nd issue contains an article by A. A. Allen, who takes issue with Harry Frye, claiming a marked discrepancy in results of the methods used to determine the sum of areas of several circles combined. Mr. Allen shows a difference of 8.3511 square inches, and proceeds

to "roast" Mr. Frye. Mr. Allen mentioned the solution I gave November 24th. At that time, in hurriedly looking over the problem as given by Mr. Frye, I noticed what appeared as typographical errors in the first and third columns, omissions, which I expected Mr. Frye would supply later on to make the diagonal at 45 degrees at the right, laying off the radii on the horizontal and vertical axis, note intersections of 3 and 4, then in turn 5 with five, the result with 6, etc., to and including 8, using a scale that will show work to advantage, preferably double size, and the final result will show radius approximately, by scale to be $12\frac{1}{4}$, which reduced will be about $6\frac{2}{16}$. Mr. Allen finds it $6\frac{15}{16}$ by Mr. Frye's method.

At the left side, consider Mr. Frye's method. This is difficult without a compass or circles, but as 4 is half of 8 we can readily locate point A, the apex of an equilateral matter clearer.

I'm not a sheet metal worker, not at all experienced in that line, but occasionally make drawings and the problem interested me. I have no compass either now. Some miscreant invaded my Royal Gold and Purple Sanctum and with malice aforethought feloniously removed the compass, so I have to adopt other methods.

Making calculation based on the values given by Mr. Allen, radii 3-4, 4-4, 5-4, 6-4 and 8-4, we may use 3, 4, 5, 6 and 8 as representing these values. Mr. Allen made separate calculations, which is not necessary, the factor 3.1416 entering into each, so we take the squares, find their sum, as 9-16, 16-16, 25-16, 36-16 and 64-16, total 150-16, the square of the required radius and find the area is 29.4525 square inches.

Using my method of intersecting tangents, 3 and 4 produce 5, and using 5 in connection with itself we find 50 is the square of the resulting radius. Having no compass, nor circles, draw axis of circles, also triangle, 4 being the point from which versines are measured, the vertical and intersection at X may

be determined by a little trial, and I find, even by this crude method, the radius is practically the same as by the method at the right, bearing out Mr. Frye's method.

If any of your readers having a compass, will work this out, I feel sure they will bear me out, and join with Mr. Frye in giving Mr. Allen the merry Ha! Ha!

J. P. BUCKWALTER.
Macon, Georgia.

Notes and Queries

Gasoline Power Lawn Mower.

From C. A. Nordgren, Paxton, Illinois.

Who makes a gasoline power lawn mower—sickle cut preferred?

Ans.—The Ideal Power Lawn Mower Company, 11 East Harrison Street, Chicago, Illinois.

"Economy" Furnace.

From Swanger & Thompson, Clarion, Iowa.

Please inform us who makes the "Economy" furnace.

Ans.—International Heater Company, Utica, New York, and 1933 Wentworth Avenue, Chicago, Illinois.

"Robertson" Ventilator.

From Robert Gordon, Incorporated, 22 West Austin Avenue, Chicago, Illinois.

Who makes the "Robertson" ventilator?

Ans.—H. H. Robertson Company, 310 South Michigan Avenue, Chicago, Illinois.

Metal Weatherstrips.

From C. Lawrence, Wabash, Indiana.

Kindly tell me who makes metal weatherstrips.

Ans.—Federal Metal Weatherstrip Company, 1238 Fullerton Avenue; Chicago Metal Weatherstrip Company, 1617 North Troy Street, and Allmetal Weatherstrip Company, 229 West Illinois Street; all of Chicago, Illinois, and American Metal Weatherstrip Company, Grand Rapids, Michigan.

Aluminum Solder.

From James J. Nelson, 2137 Staebler Street, Cincinnati, Ohio.

Can you tell me who makes an acid or flux for soldering aluminum?

Ans.—Chicago Solder Company, 4201 Wrightwood Avenue, Chicago,

Illinois; Special Chemicals Company, Highland Park, Illinois, and L. B. Allen Company, Incorporated, 4519 North Lincoln Street, Chicago, Illinois.

Second Hand Tools.

From George G. Mirlach, Colonial Manufacturing Company, Beaver Dam, Wisconsin.

Where can I get a second hand squaring shear 30 inches wide; also second hand metal folder to fold not less than $1\frac{1}{4}$ by 30 inches?

Ans.—B. L. Saltzman, 524 West Van Buren Street, and Maplewood Machinery Company, 2547 Fullerton Avenue, both of Chicago, Illinois. Also, refer to the Wants and Sales columns of AMERICAN ARTISAN under "Tinners' Tools."

"Our Own" Water Heater.

From West Side Hardware Company, 1518 Wesley Avenue, Evanston, Illinois.

We should like to know who makes the "Our Own" water heater.

Ans.—National Radiator Company, Johnstown, Pennsylvania.

Retinning Outfits.

From C. A. Nordgren, Paxton, Illinois.

Please advise me who makes retinning outfits such as are used for retinning ice cream and milk cans.

Ans.—Callender Soldering Process Company, 12 South Jefferson Street, Chicago, Illinois.

Angle Iron.

From L. L. Furman, Williamsburg, Iowa.

Where can I buy angle iron formed in circles?

Ans.—Joseph T. Ryerson and Son, 2558 West 16th Street, Chicago, Illinois.

Hand Crimper.

From Mississippi Valley School Supply Company, 313 Olive Street, St. Louis, Missouri.

Will you please advise us who makes a hand crimper for sheet metal pipe, stove pipe, air pipe, etc., which works like a pair of pliers?

Ans.—The Peck, Stow and Wilcox Company, Southington, Connecticut.

Fireplace Heater.

From William U. Metzger, 122 North Edwards Street, Kalamazoo, Michigan.

Can you give us the name of a company that makes a fireplace heater that burns coal or wood?

Ans.—William H. Hoops Company, 529 South Wabash Avenue, Chicago, Illinois.

A Profit Touchdown in Sight for This Aggressive Hardware Man Selling Sporting Goods.

Football Goods Window Displays Showing Lots of Action Attracts Attention of Passer-by in Large Numbers.

THE retail hardware merchant whose business does not warrant the employment of a professional window trimmer finds himself up against it, so to speak, when it comes to displaying sporting goods. He finds himself wondering how he can instill some kind of action in the window so as to create a greater interest in his goods.

Why not go to the game itself? The accompanying football goods

window is a good representation of the sort of action required.

The window was arranged by Melvin G. Cottier for the Murphy-Maclay Hardware Company, Great Falls, Montana.

Mr. Cottier makes the following remarks:

"The designer of this window display experienced a great deal of difficulty in exhibiting conspicuously the football equipment in such a way

as to attract the attention of the passer-by until it was decided to use figures expressing the action of the game itself.

"The accompanying illustration shows our recent football window. The figure of the boy football player not only shows action, but expresses action yet to be completed. There is immediate interest aroused in the mind of the spectators as to whether he will make his goal or fall before



Football Goods Window Display Showing Action Made by Melvin G. Cottier for the Murphy-Maclay Hardware Company, Great Falls, Montana.

he has entirely crossed the line.

"The three boys in the foreground were first painted in bright colors on beaver board, and then cut out and placed forward of the background scene, which shows the remainder of the players.

"The goods displayed in this win-

dow were not crowded in, but were chosen to conform with the athletic spirit of the display.

"The success of various windows of the type using figures in action that we have used to create interest in football equipment have produced excellent results."

elixir to bring them out of their cool homes and into the store.

As it was a physical impossibility to prescribe setting up exercises to arouse his patrons from their state of drowsy lethargy, he had to get them into the store by some other method. Having perfected his organization, he had to give it something to do. He reasoned that to put on a special sale would bring a large crowd into the store one or two days and nothing the third, fourth and fifth. This he was particularly anxious to avoid, believing it better to bring them in in a steady stream each day.

Now, his past experience had taught him that the only successful way to bring a steady stream of customers into the store was to feature two or three articles each day and advertise all of the features a month ahead and then advertise the feature for each day a day in advance. In this way the customer would be compelled to come to the store for each feature as it appeared.

Needless to say, the plan as described, worked out well and is producing excellent results. The four months of diminished business due to hot weather have disappeared so far as our friend, this ambitious hardware man, is concerned.

EXCESSIVELY warm weather produces a lethargic attitude toward business in most sales clerks, which even finds its way, although not openly admitted, into the inner sanctum of the boss' office.

This morbid drowsiness extends over a period ordinarily of about four months, after which the victims recover and return to somewhere near their normal state of productivity.

Many business heads are firm in their belief that there is no help for this condition; that it is a circumstance over which they have no control and it must, therefore, be allowed to run its course unhindered.

There are business men, however, who have discovered methods of putting "pep" into their sales methods during these four hot months of each year; who have sought out ways of changing the attitude of their sales clerks toward their work.

The method of one successful hardware man in particular came to our attention.

In the first place this man believed it was necessary to rearrange his sales organization; to change his battle front in much the same manner as is done on board a battleship when stripped for action.

His first step was (much to our surprise) to hire a competent physical director to give the sales clerks half hour lectures on personal hygiene and setting up exercises, to be followed by a cool bath each morning before going to work. Then they

were told about the necessities of changing their socks frequently, of wearing light, serviceable shoes, and finally about the advantages in wearing light weight as well as light colored clothes, in preference to the usual run of dark blues and other dark colors so often seemingly preferred by sales clerks.

Then the store itself was rearranged to let as much circulation as possible take place in the store. The circulation itself was assisted by means of several fans placed at numerous advantageous points throughout the store. Employes were encouraged to make helpful suggestions on behalf of their own welfare by a series of prizes. Cooling drinks were also had during certain periods of the day.

Then, following all these rearrangements and lectures the climax was capped with a store slogan based upon the fact that the salaries paid the employes would be based upon the condition of the business.

In this way the employes were brought to a state of mind where they did not long for the hour of departure from the store at night, and were also found reluctant to go on their vacations as well as eager to return.

So much for the internal organization.

Now, our friend reasoned that if his clerks needed priming to keep them "pepped" up, the customers were human beings just like the clerks and they, too, needed an

*Swanger & Thompson,
Clarion, Iowa, Like
Our Paper.*

Here's another subscriber to AMERICAN ARTISAN who has a good word for us.

Swanger & Thompson, Clarion, Iowa, writes:

To AMERICAN ARTISAN :

We like your paper the best of any that we have ever subscribed for and could not get along without it.

Yours truly,
SWANGER & THOMPSON.
Clarion, Iowa.

The most I can do for my friend is simply to be his friend. I have no wealth to bestow on him. If he knows that I am happy in loving him he will want no other reward. Is not friendship divine in this?

When the Outdoors Calls, Does Your Store Answer? Make Your Store Headquarters for Autoists Who Plan Camping Trips.

Much Additional Trade Can Be Brought to Your Store With Camping Goods Window Displays.

EVERY summer sees new recruits to the ranks of automobile owners, who want to get out in the "great open spaces where men are men," says the service department Associated Manufacturers of Enamelware, 46 Cedar Street, New York. There are about thirteen and one-half million car owners in this country and a good percentage of them will take long camping trips this summer, while a still larger number will go off on picnics and week end excursions. Here's an opportunity for wideawake hardware men to capitalize on the call of the open road by selling camp equipment.

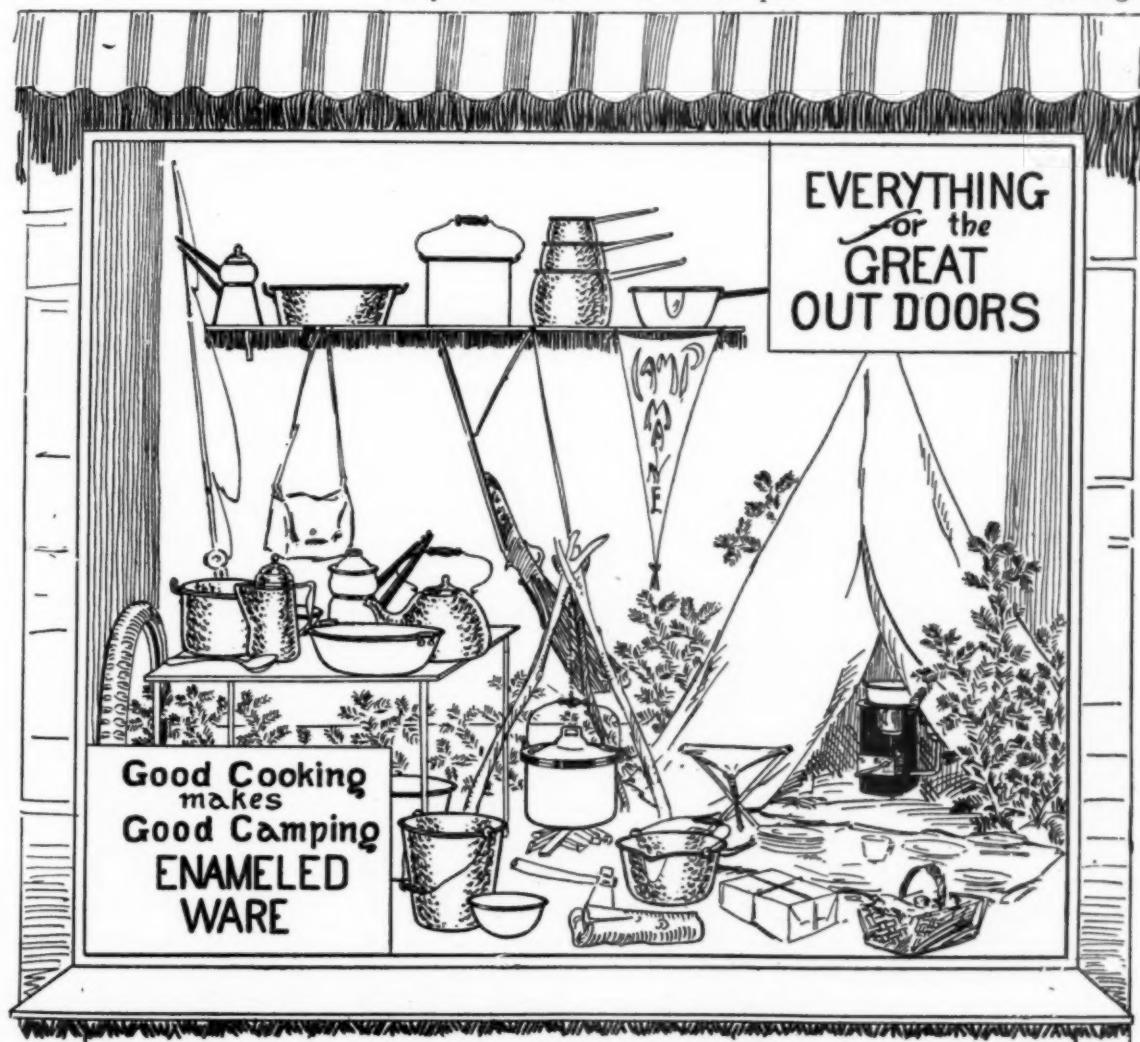
There's enough "roughing it" in automobile camping with the best of equipment. Insects and weather conditions furnish enough hardship. The pleasure in the trip will depend in a large measure on the equipment which the hardware man can furnish. There are numerous items for the car itself and there is a still larger list of things developed in the past few years, especially for the automobile owner, which hardware men are supplying.

About the first thing the camper acquires is a tent or some form of shelter. There are any number of "trick" combinations on the market today which will make the camper

feel at home; some of them are merely shelters, others supply several rooms and serve as a garage to boot. Then there are sleeping bags, cots, pneumatic mattresses and waterproof sheetings. These are all profitable items for the hardware man to sell.

For the camper who plans to spend several months in the open there are accessories which are essential to his happiness. Among such things may be listed folding chairs and tables, collapsible pails and water bags, chains and ropes, axes and hatchets which come in handy for pitching camp and driving in tent pegs; also smaller tools like a knife and a hammer. These are all good items for the hardware man to push.

Fresh air creates appetites and eating becomes one of the most important functions in the routine of camp life. Campers have different ideas as to what cooking equipment



Window Display of Enamel Ware Used in Camping Trips.

is necessary, depending largely on where they are going and how long they intend to stay. The day of building open air fires for cooking seems to be passing. It's well enough to try it a few times, but one soon gets tired collecting sticks and waiting to get hot coals. Therefore, the civilized stove seems pretty good after all. There are many of these devices for eliminating burned fingers now on the market. The camper has his choice of gasoline, kerosene, acetylene gas or alcohol stoves and there are many accessories to go with them in the shape of racks and tripods.

It is desirable to be able to carry food without spoiling and to have hot things to drink before pitching camp. For this purpose small ice boxes and thermos bottles have been invented and they are really indispensable for the camper who desires the maximum of comfort.

All camp equipment gets more or less hard treatment and for that reason only the most serviceable should be carried. All utensils should be of such a character as to require a minimum of effort in cleaning. Hot water never flows in abundance and greasy dishes are far from easy to handle, therefore utensils should have smooth, sanitary surfaces and should not be affected by the various kinds of water that one comes across in the course of a trip. Enamelled ware is especially good for camping because it is easily cleaned, stands hard usage and is not affected by hard or alkali water.

There is never too much room about a car for storage purposes, hence all equipment should be chosen with some foresight. Properly nested a large amount of equipment can be stowed in a small space and it is all together when the camper wants it. A good combination of enamelled ware for cooking and for serving a party of five persons is as follows:

4 kettles (about 11, 9, 7 and 5 quarts).

2 saucepans (4 and 2 quarts).

1 coffee pot.

Ladle or dipper.

Cups and saucers (5).

Nest of bowls (5).

Dinner plates (5).

Tray.

Pail.

Additional articles might be a tea kettle and a frying pan. Of course, there should be plenty of table ware in the shape of knives, forks, spoons, pepper and salt shakers, can openers and kitchen knives. An enamelled ware basin comes in handy for washing up both the camper and his equipment.

A camping enthusiast is one of the best prospects whom the hardware man can find. Who else, excepting the housewife, is more in the market for hardware in large assortments? The camper is not only a prospect, but a willing one. There are certain things that he needs and wants which the hardware man has to sell and he will be found to be receptive to any suggestions which will make his trip the one big event of the year for himself and his family.

The live hardware dealer should have a card index of every automobile owner in his territory. Such lists are not hard to make up from the registration lists of owners and they may even be bought for a reasonable sum from concerns which specialize in supplying them. A letter should be sent to each of these owners, appealing to the spirit of adventure in the open and calling attention to the store's facilities for making the trip a success. A return card may be enclosed, asking when the great event is coming off, and on the basis of replies an active campaign can be directed toward the interested ones.

Circulars displaying combination equipment and new devices for the comfort and well-being of the camper should be sent at frequent intervals throughout the summer and fall for many of the trips are planned for the end of the season. It is essential to get in on the planning, for the longer the camper has the dealer in mind the more likely he is to place an order.

Perhaps the prospective camper has no itinerary planned. Why not help him out by displaying maps? This may lead to the sale of auto-

mobile maps and blue books and when it draws the prospective camper into the store the conversation can be turned to the subject of equipment.

Still another boost can be given to the sale of camping equipment by the use of window displays. A good display sows the seeds of desire in the heart of every man or woman who loves the great outdoors. Feature camp equipment in its natural setting by lavish use of green boughs and leaves. Show a tent and a meal in the process of cooking. It is not hard to give the effect of fire with a piece of red paper and an electric light and it has strong pulling power. Show enamelled ware dishes and cooking utensils scattered around in an appropriate manner and perhaps some canned food. It will get the idea across.

Rules for Champion Painter Contest Adopted in Ohio.

According to the plans adopted by the Master Painters' and Decorators' Association of Ohio at its annual convention at Cedar Point, the master painters in each city will hold a contest to determine who is the champion painter in each city. These city champions will then compete for state championship.

Rules for Locals in Ohio.

Contestant shall be employed by a member of the Master House Painters' and Decorators' Association of Ohio. The contestant shall have been in the employ continually for one year previous to the contest. He shall be a working mechanic. He shall not have been an employer of labor during that period. At a given time and place he shall submit three separate samples of work on a standard size beaver board, 3x5 feet.

Number 1 Board:

Give the entire surface one coat of flat priming paint followed by a second coat to cover four-fifths with the second coat same material. Third, cover three-fifths with an egg-shell paint. Fourth, apply a tiffany blend of not less than three colors stippled with a straight stippling brush—over this apply a pre-

servative coating two-fifths of the surface.

Number 2 Board:

Same size beaver board to have three coats of under-coater and finished with a high grade enamel. First coat to cover entire board. Second coat to cover three-fourths board. Third coat to cover two-fourths board. Fourth coat enamel to cover one-fourth board.

Number 3 Board:

Finish with three coats of flat wall paint. First coat to cover entire board. Second coat to cover two-thirds board. Third coat to cover one-third board.

These three exhibits are to be submitted to the local committee at the time and place designated by the local committee, with the following data :

The amount of the various paints, giving the proportions of mixing and the length of time to execute three samples, complete.

The contestant is to appear before the committee at a given time to be prepared to take an examination on color mixing taken from Lesson 12, Page 98, in Elementary Studies in House Painting, Decorating and Paperhanging, a text book produced under the direction of the International Association of Master House Painters and Decorators of the United States and Canada. These books can be obtained from our local secretary.

He will be required to either actually mix the twenty colors shown on the chart or be given a written examination giving the ingredients that compose these twenty different colors. The answers can all be obtained from this text book previous to the examination, but are not to be referred to at the actual time of examination, but study of these from the text book will be permitted previous to the examination.

The percentage plan to rule on points as follows :

Board Number 1—Twenty per cent.

Board Number 2—Twenty per cent.

Board Number 3—Twenty per cent.

Examination for Color Mixing—Twenty per cent.

The total time added for the executing three boards and color mixing, 15 per cent.

Five per cent for personal appearance of the contestant.

Making a total of 100 per cent.

Three master painters will decide and judge all contests.

This report as adopted was submitted by William Downie, Andrew Quinn and C. C. Heckman, and also recommended the present committee be enlarged to include one representative from each local association.

New York State Workmen's Compensation Law Amended.

In its 1924 session the New York Legislature enacted several amendments to the Workmen's Compensation Law, which will increase the benefits and will require a corresponding increase in the premium rates for this class of insurance. These amendments are briefly described as follows :

1. The waiting period has been reduced so that compensation payments for injuries sustained on and after January 1, 1925, will begin on the eighth day of disability instead of on the fifteenth day as at present; in the case of disabilities extending over a period of more than forty-nine days compensation will be allowed from the date of the disability as at present.

2. The period during which compensation is paid for the loss of a thumb is increased from 60 to 75 weeks.

3. The period during which compensation is paid for the loss of an eye is increased from 128 to 160 weeks.

4. The maximum wage considered in computing death benefits is raised from \$125 to \$150 a month.

5. In cases of permanent partial disability, where the duration of temporary total disability, or healing period, exceeds a specified number of weeks, additional compensation is payable during the period which exceeds the time provided in the statute.

The first amendment relating to the waiting period becomes effective on January 1, 1925; all other amendments were effective on July 1, 1924.

To provide for these increased benefits, all companies writing compensation insurance have adjusted their policies by adding 3.2 per cent to the rates for that part of the policy year extending beyond July 1, 1924, also on all new business or renewed policies dated subsequent to July 1 this year. This temporary charge of 3.2 per cent will continue until January 1, 1925, at which time a general revision of rates for all classes will take place and policies again amended in accordance with that revision.

The net result of the changes in the law will be an increase in the cost of compensation insurance for practically all employers.

Hardware Trade Benefits by Standardization.

Benefits resulting to member industries of the American Hardware Manufacturers' Association through the elimination of excess varieties, models, sizes or types of their commodities, brought about with the cooperation of the division of simplified practice, department of commerce, have caused inquiries from still other industries through the association, it was stated today at the division.

Manufacturers of horseshoes, one of whom alone makes more than 900 varieties and sizes, have asked for information as to how reductions may be made in the interests of greater efficiency, greater labor stability, and better service. Makers of forged wrenches, discovering that a wide range of finishes and sizes of that product are being offered for sale, are investigating to see what eliminations can be made in the interest of greater economy.

Southern hardware jobbers, reflecting the attitude of the retail hardware men, have suggested that there is need for simplification of the varieties of finishes, widths, and types of wire cloth. The division

is taking up the subject with the manufacturers and with other distributing and consuming interests.

The vast range of sizes, finishes and types of oil cans in another subject brought to the attention of the division, which, in coöperation with the hardware manufacturers' association, is studying whether fewer varieties would not do as well, with general benefits to manufacturer, distributor, retailer and user.

How J. H. Tregoe Views Overcrowding the Retailer.

A young man, desirous of entering the sheet metal or hardware business, has saved \$1,200. With one-third of this sum he rents a storeroom and pays rental in advance. With the remainder he buys furniture and fixtures. A large manufacturing concern, that the wheels of its industry may be kept busy, furnishes this young man goods to the extent of \$12,000. After struggling under the load, the enterprise collapses and he throws his unsold stock back upon the selling house. We have here depreciated merchandise to be sold at any price and to take the place of goods in the same line that might be sold at a legitimate profit.

There has been too much overcrowding of retail merchants in this manner, which is like stuffing a dyspeptic with food. There has been too little adherence to sound selling principles in the inviolable laws of credit. A large part of our failures in the past two years could be attributed to this cause.

I cannot understand the logic of turning out goods and overcrowding merchants when in the long run it would prove more stabilizing to have production approximate consumption.

If You Don't Know What You Are Selling How Can You Sell?

Uncertainty in your attitude undermines the confidence the customer should have in you. Know what you are talking about and express your opinions with confidence. Know what you know.

Coming Conventions

National Hardware Association Convention, Atlantic City, New Jersey, October 13, 14, 15, 16, 17, 1924. Hotel Headquarters, Marlborough-Blenheim. T. J. Fenley, Secretary-Treasurer, 505 Arch Street, Philadelphia.

American Hardware Manufacturers Association Convention, Atlantic City, New Jersey, October 14, 15, 16, 17, 1924. Hotel Headquarters, Marlborough-Blenheim. F. D. Mitchell, Secretary-Treasurer, 1819 Broadway, New York City.

Mid-Year Meeting of the National Warm Air Heating and Ventilating Association and Dedication of the Warm Air Heating Research Residence, Urbana, Illinois, December 2, 1924. Allen W. Williams, Secretary, Columbus, Ohio.

Kentucky Hardware and Implement Association Convention, Jefferson County Armory, Louisville, week of January 18, 1925. J. M. Stone, Secretary-Treasurer, 200 Republic Building, Louisville.

Western Retail Implement and Hardware Association Convention, Kansas City, Missouri, January 13, 14, 15, 1925. H. J. Hodge, Secretary, Abilene, Kansas.

Texas Hardware and Implement Association Convention, Dallas, Texas, January 20, 21, 22, 1925. Dan Scoates, Secretary-Treasurer, College Station.

West Virginia Hardware Association, Convention and Exhibition, Clarksburg, January 20 to 23, 1925. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

Indiana Sheet Metal Contractors' Association, Convention, Lafayette, February (dates not decided). Leslie W. Beach, 1136 Main Street, Richmond.

Oklahoma Hardware and Implement Association Convention, Masonic Temple, Oklahoma City, February 3, 4, 5, 1925. Charles L. Unger, Secretary-Treasurer, Oklahoma City.

Nebraska Retail Hardware Association Convention and Exhibition, Omaha, February 3, 4, 5, 6, 1925. Convention headquarters, Rome Hotel. Exhibition, City Auditorium. George H. Dietz, Secretary, 414-419 Little Building, Lincoln.

Wisconsin Retail Hardware Association Convention and Exhibition, Auditorium, Milwaukee, February 4, 5, 6, 1925. P. J. Jacobs, Secretary-Treasurer, Stevens Point.

Ohio Hardware Association, Convention and Exhibition, Columbus, February 10 to 13, 1925. James B. Carson, Secretary, 1001 Schwind Building, Dayton, Ohio.

New York State Retail Hardware Association Convention and Exposition, Buffalo, February 10, 11, 12, 13, 1925. Headquarters, Hotel Statler. Exposition at the Broadway Auditorium. John B. Foley, Secretary, City Bank Building, Syracuse.

North Dakota Retail Hardware Association Convention (place not yet selected), February 11, 12, 13, 1925. C. N. Barnes, Secretary, Grand Forks.

Montana Implement and Hardware Association Convention, Helena, February 13, 14, 1925. A. C. Talmage, Secretary-Treasurer, Bozeman.

Pennsylvania and Atlantic Seaboard Hardware Association Convention and Exhibition, February 16 to 20, 1925, at Philadelphia Commercial Museum.

Sharon E. Jones, Secretary, 604 Wesley Building, Philadelphia.

Minnesota Retail Hardware Association Convention, St. Paul Auditorium, St. Paul, February 17, 18, 19, 20, 1925. C. H. Casey, Secretary, Nicollet Avenue and Twenty-fourth Street, Minneapolis.

New England Hardware Dealers' Association Convention and Exhibition, Mechanics' Building, Boston, Massachusetts, February 23, 24, 25, 1925. George A. Fiel, Secretary, 10 High Street, Boston. Michigan Retail Hardware Association Convention, Grand Rapids, February 24, 25, 26, 27, 1925. Hotel headquarters, Hotel Pantlind. A. J. Scott, Secretary, Marine City.

Southeastern Retail Hardware Association Convention and Exhibition, Birmingham, Alabama, May, 1925. Walter Harlan, Secretary-Treasurer, 701 Grand Theater Building, Atlanta, Georgia.

Arkansas Retail Hardware Association Convention, Little Rock, May, 1925. L. P. Biggs, Secretary, 815-816 Southern Trust Building, Little Rock.

National Retail Hardware Association, Philadelphia, June, 1925. H. P. Sheets, Secretary, Indianapolis.

National Association of Sheet Metal Contractors, Atlanta, Georgia, June, 1925. E. L. Seabrook, Secretary, 608 East Chestnut Street, Philadelphia, Pennsylvania.

Retail Hardware Doings

California.

The new store of the Southern Hardware Company has opened for business at 1109 and 1111 Porter Avenue, Fernando.

The Turner Hardware and Implement Company at Modesto has been remodeled.

Iowa.

Kuemper Brothers of Guttenberg have dissolved partnership, John retiring, having sold to Ed.

Minnesota.

P. H. Pederson has sold his hardware business at Moorhead, the Moorhead Hardware Company, to H. H. Hansen and Julius Aske.

The Winona Hardware Company, 109-111 East Third Street, Winona, is owned solely by O. W. Bossard as a result of the purchase by Mr. Bossard of the interest in the business of Arthur A. Miller.

Missouri.

A deal has been completed whereby the Young Hardware Company, of Bethany, disposed of their hardware stock, J. F. Patterson of Promise City, Iowa, being the purchaser.

Nebraska.

Vic Snyder has sold his hardware store at Macon to parties at North Platte.

North Dakota.

The Sterum Hardware Company at Sterum has been sold to Mr. Knutson of Alexandria, Minnesota.

Ohio.

The Bridge Hardware Company, a well known Kenton business firm, located on the north side of the square, has found it necessary to secure larger display space, and after September 1st will occupy the room formerly occupied by the Cantwell Hardware Company.

Where Is Your Stove Display Located, In the Front of the Store or on the Second Floor?

Stoves Can Be Sold Best When Trade Is Solicited by Personal Calls or Through the Mail

THE proper place for a stove display some stove merchants argue is on the second floor, where the clerk has a chance to get the customer away from the noise and confusion which is always present on the first floor and toward the display windows.

The reason for the difference of opinion is that some merchants do not solicit business through the mail or otherwise for their stove departments. They rely entirely upon the display to sell the stove.

Under these circumstances, of course, the most obvious location for the stove is on the first floor toward the entrance. Your customers will not buy what they do not see and are not otherwise brought into contact with the article you wish to sell.

The wise stove merchant will solicit the stove trade. He may place

one or two stoves near the front of the store, but the bulk of his stock of stoves will be either in the rear or on the second floor.

logical step then announced another contest, offering another prize of \$50.00 for the best essay on "Why This Advertisement Was Selected by the Judges."

All this activity makes excellent

publicity for the Red Wheel product. The prize-winning ad by Mr. Holmes was included in the *El Paso Times'* own advertisement announcing the prize essay contest, thereby making additional boosts for Lorain. Read the ad that won the prize and then see if you don't feel that the judges showed good judgment in awarding the prize.

Send your ads to us for helpful criticism.

Now that glands are the fashion as a panacea for every ill or want, why not give the sweat-glands a good tryout and see what happens?

And We're Glad He's Back

He Came Into Our Office and Said:

"Well, I'm back, and it sure seems good to get back where the sun shines. No, I guess the advertising dope wasn't working while I was there 'cause it rained about every day, cold and foggy—no sunshine. So here I am and I want to get the gas turned on at the old address again

"And say—have the boys come up and connect our Clark Jewel range, that one we bought of you that has the Lorain heat regulator on the oven. The wife sure is in love with that stove and when we went away she had it stored in case we ever came back.

"Can you get that done so we can get supper tonight on the old range? Fine, well, go to it, and say, boys, you can tell 'em that we've got a combination of sun-shine and gas service here in El Paso that is mighty hard to beat. So long!"

El Paso Gas Co.

A Unique Way of Advertising Gas Ranges.

The *El Paso Times* as the next

Unmistakable Evidence Shows Trade On Mend—Commodity Price Trend Definitely Up.

Grain Prices Move Still Higher—Non-Ferrous Metal Prices Continue Strong.

A BETTER tone and somewhat larger operations in the steel and automobile industries are reported by the midweek reviews. But the situation in the steel industry is complicated by the fact that there has been a further yielding of prices in important finished products, although pig iron has firmed up.

"The Steel Corporation is reported to be operating somewhat above 55 per cent on ingots and slightly higher on rolled products," the *Iron Age* says. "The entire industry probably was close to 55 per cent as the week began. The Chicago district furnished some items in an improved railroad demand that has been talked of for weeks, but more as a hope than as a definite expectation."

"Improvement in demand for steel is perceptible, but the rate of recovery is below expectations," the *Iron Trade* says. "Uncertainty in prices is retarding buying and the majority of consumers are not yet convinced that the low point in prices has been touched."

"A slightly better tone is being given to automobile production the latter half of this month," *Automotive Industries* states. "The up-trend in manufacturing schedules is not great, but bears witness to a steadily improving market and a continued forward movement in dealers' stocks. Sales volume has not developed to a high point and spottiness still marks demand throughout the country. There is a somewhat improved demand from agricultural centers."

Copper.

Electrolytic copper has held at 13.75 cents, delivered Connecticut, for prompt to November deliveries; and at 13.62½ cents, f. a. s. New York for export. Copper and brass rolled and drawn products recently

have been advanced twice, ¼ cent each time, on August 11 and August 14. Seamless tubes were advanced ½ cent on the first date and left unchanged on the second date.

Discounts off the extras on rolled brass and nickel silver were reduced from 33⅓ to 25 per cent. This includes seamless copper tubes, but not seamless tubes of other mixtures on which the extras now become net. Casting copper advanced to 13.25 cents; lake to 13.87½ cents, delivered.

Tin.

Tin has been irregular, but buying by consumers has improved, especially of nearby deliveries. The market has ranged between 52 cents and 53 cents, the past week. Sterling exchange rates have fluctuated between \$4.50 and \$4.54.

Lead.

Lead prices have advanced sharply, the American Smelting & Refining Company following the outside market.

The Smelting Company on August 15 announced another ¼ cent rise to 8 cents, New York. Following this advance the open market went to 8.25 cents, New York; 8 cents, St. Louis. The demand for lead has been extremely heavy.

Zinc.

The zinc market has been strong, with better buying by galvanizers, continued export interest and some further accumulation by operators.

The price has been holding 6.20 cents, East St. Louis, and today little could be had under 8.25 cents for August shipment, with 2½ points premium for each month ahead.

Solder.

Chicago warehouse prices on solder are as follows: Warranted,

50-50, \$33.00; Commercial, 45-55, \$32.25, and Plumbers', \$31.00, all per 100 pounds.

Wire and Nails.

New business from both jobbers and manufacturers of wire and wire products at Chicago has been decidedly better and bookings last week were the highest in several months.

The price situation is none too satisfactory and while 2.60 cents, Pittsburgh, still governs for most business in plain wire, 2.55 cents has been done. It is reported that 2.80 cents, Pittsburgh, is becoming general for wire nails.

Bolts and Nuts.

Makers of bolts and nuts generally at Chicago are receiving a slightly better run of orders from general sources, but improvement is coming slowly.

Some farm implement manufacturers have bought a trifle more freely and decided improvement from this source is looked for in the near future, but with both the implement and the automobile trade lagging, bolt and nut business cannot increase appreciably.

The price range still is 60 and 20 off to 70 off for large machine bolts.

Tin Plate.

Canmakers are placing tin plate requirements in anticipation of good crops of both corn and tomatoes.

Third quarter contracts for tin plate of one large canmaker already have been executed and added requirements are about to be placed, which, from all indication, will exceed quarterly shipments by 100,000 base boxes.

Tin plate demand for the general run of fabrication is satisfactory, with the exception of paint can stock, and demand in this direction

has been slow owing to rainy weather last spring which has tended to defer house painting and consequently to curb the production of containers for this purpose.

Another good point is that the largest can maker has placed with the leading interest a large additional quantity for the current quarter. It had placed for the quarter a quantity that could be considered normal when allowance is made for the extra large quantity it placed for second quarter, and now it adds to the tonnage, which had been supposed to complete the quarter's requirements, a very substantial amount, say, running up to six figures in the number of base boxes.

The vegetable canning crops are not turning out well on the whole, and if they were as important as seems to be supposed in many quarters as an outlet for tin plate the situation would not be good, but they really fall very far short of being a preponderating influence in determining a year's consumption of tin plate.

In pease and tomatoes the situation is so bad that it is a good feature that the size of these packs is still in doubt, the danger having been that there would be no doubt but that these packs would be very poor.

The market in canned goods is acting as if it were certain that the packs would be very low. For corn there is much hope, although the corn pack is by no means secure.

Sheets.

Buying interest in the sheet market this week has been highly satisfactory with the volume of tonnage recorded as the largest for any seven-day period since April 1. At the forefront of the improvement is the fact that jobbers, whose stocks largely find their way into agricultural districts, are buying good size tonnages of various grades in anticipation of better rural demand.

Another factor on the constructive side of the market is the increased interest displayed by numerous consumers in lining up re-

quirements for fourth quarter and some of these involve worth while tonnages.

The policy of some producers, however, is to refrain from booking tonnage for fourth quarter production until prices are on a profitable basis.

At the present rate of operation, few mills, if any in this country, are in a position to enter tonnages of black on the right side of the ledger, and until operation gets into higher grounds the attitude of producers largely is to reject any placements for shipment during the last quarter.

Prices are showing more firmness right along, with blue annealed quotable at 2.70 cents, black at 3.50 cents, and galvanized at 4.60 cents, Pittsburgh.

Automobile sheets are held at 4.75

cents for No. 22 gauge. The American Sheet and Tin Plate Company is quoting these prices on all tonnage entered prior to August 31 for delivery not later than September 30. Its operation this week shows an increase, with 45 per cent of capacity engaged.

Old Metals.

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$17.00 to \$17.50; old iron axles, \$24.00 to \$24.50; steel springs, \$18.50 to \$19.00; No. 1 wrought iron, \$14.00 to \$14.50; No. 1 cast, \$16.00 to \$16.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 8 cents; light brass, 5 cents; lead, 5 cents; zinc, 3½ cents, and cast aluminum, 14½ cents.

Pig Iron Price Becomes Firmer as Sales Increase in Volume—Mill Operations Up.

**No. 2 Iron at Pittsburgh Is Quoted at \$19 and \$19.50—
Chicago Prices Moved Up 50 Cents Per Ton.**

UNDER the influence of firmer pig iron prices, substantial sales, including iron for fourth quarter, are being made. Purchases in the Pittsburgh market aggregated about 20,000 tons, largely foundry iron. No. 2 iron now is quoted at \$19.00 to \$19.50, valley. Foundry iron in the east has gone to about \$20.50, furnace. Sales by New York dealers last week aggregated about 20,000 tons and business handled from Philadelphia involved heavy tonnage. Prices are firm in all markets, including the south, where the upward tendency was last to be felt.

The market report of Rogers, Brown & Company, under date of August 16, is as follows:

"Better sentiment is being crystallized in price advances.

"The Chicago market has moved up 50 cents per ton, with sales being made on the new level. Some very attractive business was placed just prior to the advance. There are rumors of a growing firmness

in other districts. A better foundry melt is evident and specifications are being received for shipments against contracts which have long been held up. With the low production of pig iron, stocks on the furnace yards are diminishing.

"Figures just published show that during the month of July shipments of merchant pig iron equaled production, the first time this has been true since last March. Stocks have decreased also for the first time since the same month. As the August trend is more decidedly in the same direction, it is expected that when the figures appear they will give substantial grounds for believing that the turn for the better has actually come. A very favorable factor is the much better sentiment among the agriculture implement manufacturers.

"A further reduction in Ferro Manganese brought that alloy down to \$95.00 seaboard, at least \$5.00 lower than it has been at any time since September, 1922."

Chicago Warehouse Prices on Hardware and Metals.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

| | |
|------------------------|----------------|
| Chicago Foundry | \$20 50 |
| Southern Fdy. No. | |
| 3 | 24 01 to 24 51 |
| coal | 29 04 |
| Lake Superior Charcoal | 29 04 |
| Malleable | 20 50 |

FIRST QUALITY BRIGHT TIN PLATES.

| | | |
|-------|------------------|-------|
| IC | 20x28 112 sheets | 25 80 |
| IX | 20x28 | 27 25 |
| IXX | 20x28 56 sheets | 15 25 |
| XXXX | 20x28 | 16 45 |
| XXXXX | 20x28 | 17 55 |

TERNE PLATES

| | Per Box | |
|----|--------------------------|---------|
| IC | 20x28, 40-lb. 112 sheets | \$25 10 |
| IX | 20x28, 40-lb. | 28 00 |
| IC | 20x28, 30-lb. | 21 30 |
| IX | 20x28, 30-lb. | 24 20 |
| IC | 20x28, 25-lb. | 20 30 |
| IX | 20x28, 25-lb. | 23 20 |
| IC | 20x28, 20-lb. | 17 80 |
| IV | 20x28, 20-lb. | 20 65 |
| IC | 20x28, 15-lb. | 16 55 |
| IC | 20x28, 12-lb. | 15 25 |
| IC | 20x28, 8-lb. | 13 55 |

COKE PLATES.

| | |
|------------------------------|---------|
| Cokes, 80 lbs., base, 20x28 | \$12 70 |
| Cokes, 90 lbs., base, 20x28 | 12 95 |
| Cokes, 100 lbs., base, 20x28 | 13 25 |
| Cokes, 107 lbs., base, IC | |
| 20x28 | 13 60 |
| Cokes, 135 lbs., base, IX | |
| 20x28 | 15 40 |
| Cokes, 155 lbs., base, 56 | |
| sheets | 8 80 |
| Cokes, 175 lbs., base, 56 | |
| sheets | 9 70 |
| Cokes, 195 lbs., base, 56 | |
| sheets | 10 65 |

BLUE ANNEALED SHEETS.

| | | |
|-------------|------------------|------|
| Base 10 ga. |per 100 lbs. | 3 80 |
|-------------|------------------|------|

ONE PASS COLD ROLLED BLACK.

| | | |
|-----------|------------------|-------|
| No. 18-20 |per 100 lbs. | 34 30 |
| No. 22-24 |per 100 lbs. | 4 35 |
| No. 26 |per 100 lbs. | 4 40 |
| No. 27 |per 100 lbs. | 4 45 |
| No. 28 |per 100 lbs. | 4 50 |
| No. 29 |per 100 lbs. | 4 60 |

GALVANIZED.

| | | |
|-----------|------------------|--------|
| No. 16 |per 100 lbs. | \$4 75 |
| No. 18-20 |per 100 lbs. | 4 90 |
| No. 22-24 |per 100 lbs. | 5 05 |
| No. 26 |per 100 lbs. | 5 20 |
| No. 27 |per 100 lbs. | 5 35 |
| No. 28 |per 100 lbs. | 5 50 |
| No. 30 |per 100 lbs. | 6 00 |

BAR SOLDER.

| | | |
|-------------|------------------|-------|
| Warranted. |per 100 lbs. | 23 00 |
| 50-50 |per 100 lbs. | |
| Commercial. |per 100 lbs. | 32 25 |
| 45-55 |per 100 lbs. | |
| Plumbers |per 100 lbs. | 31 00 |

ZINC.

| | | |
|----------|-------|------|
| In Slabs | | 6 75 |
|----------|-------|------|

SHEET ZINC.

| | | |
|-------------------------------|------|-------|
| Cask lots, stock, 100 lbs. | .... | 11 50 |
| Less than cask lots, 100 lbs. | .... | 11 75 |

BRASS.

| | | |
|----------------------|------|---------|
| Sheets, Chicago base | .... | 18c |
| Mill Base | .... | 16 1/2c |
| Tubing, brazed, base | .... | 24 1/4c |
| Wire, base | .... | 16 1/2c |

COPPER.

| | | |
|------------------------------|------|---------|
| Sheets, Chicago base | .... | 20 3c |
| Mill base | .... | 19 3c |
| Tubing, seamless, base | .... | 22 1/2c |
| Wire, No. 9 & 10 B. & S. Ga. | .... | 17c |
| Wire, No. 11, B. & S. Ga. | .... | 17c |

LEAD.

| | | |
|--------------|------------------|-------|
| American Pig | .... | 9 25 |
| Bar | .... | 10 50 |
| Sheet. | .... |  |
| Full Coils |per 100 lbs. | 12 20 |
| Cut Coils |per 100 lbs. | 12 50 |

TIN.

| | | |
|---------|------------------|-------|
| Pig Tin |per 100 lbs. | 58 75 |
| Bar Tin |per 100 lbs. | 60 25 |

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ADZES.

| | | |
|-----------|----------|-----|
| Coopers'. | Barton's | Net |
| | White's | Net |

AMMUNITION.

| | |
|------------------------------|-----|
| Shells, Loaded, Peters. | |
| Loaded with Black Powder 18% | |
| Loaded with Smokeless | |
| Powder | 18% |

Winchester.

Smokeless Repeater

Grade

Smokeless Leader

Grade

Black Powder

U. M. C.

Nitro Club

10 & 4%

Arrow

New Club

10 & 4%

Gun Wads—per 1000.

Winchester 7-8 gauge 10&7 1/2%

" 9-10 gauge 10&7 1/2%

" 11-22 gauge 10&7 1/2%

ASBESTOS.

Paper up to 1/16" .6c per lb.

Rollboard .64c per lb.

Millboard 2/32 to 1/4" .6c per lb.

Corrugated Paper (\$60 sq. ft. to roll) \$6.00 per roll

AUGERS.

Boring Machine 40&10%

Carpenter's Nut .50%

Hollow.

Stearns, No. 4, doz. \$11 50

Post Hole.

Iwan's Post Hole and Well 35%

Vaughn's, 4 to 9 in. \$15 60

AXES.

First Quality, Single

Bitted (unhandled), 3 to 4 lb., per doz. \$14 00

Good Quality, Single

Bitted, same weight, per doz. 13 00

BARS, CROW.

Steel, 4 ft., 10 lb. \$8 20

Steel, 5 ft., 18 lb. 1 40

Pinch Bars 5 1/2 ft., 24 lb. 1 60

BARS, WRECKING.

V. & B. No. 12. 30 30

V. & B. No. 24. 0 42

V. & B. No. 324. 9 57

V. & B. No. 30. 0 48

V. & B. No. 330. 0 63

BITS.

All Vaughan and Bushnell.

Screw Driver, No. 30, each \$ 30

Screw Driver, No. 1, each 18

Reamer, No. 30, each.... 45

Reamer, No. 100, each.... 45

Countersink, No. 13, each.... 23

Countersink, Nos. 14-15, each 30

BLADES, SAW.

Wood.

Atkins 20-in.

Nos. 6 40 26

\$8 98 \$9 45 \$5 40

Patent

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